LOWER BOW RIVER
FISH POPULATION STATUS ASSESSMENT
- August 2000 -

RL&L
Environmental Services Ltd.

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FISH POPULATION STATUS ASSESSMENT

August 2000

Prepared for

ALBERTA ENVIRONMENT
Natural Resources Service
Fisheries and Wildlife Management Division
Bow Region
Strathmore, Alberta

by

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Cover Photo: A member of Alberta Environment collects a scale sample for ageing purposes from a Bow River brown trout.

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1.0 INTRODUCTION

The Lower Bow River near Calgary (downstream of Bearspaw Dam) provides an excellent sport fishery for rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), and mountain whitefish (*Prosopium williamsoni*). Fisheries studies conducted during the early 1980's assessed the status of brown trout and rainbow trout populations immediately downstream of Calgary (Sosiak and Griffiths 1983; Sosiak 1984). Based on these studies, new fishing regulations requiring anglers to release all trout greater than 40 cm in length were implemented in the section of river between Highway 22X bridge and the Carseland Weir in 1983. This regulation change was designed to increase the number of large trout in the system. Monitoring studies were conducted between 1984 and 1992 (Sosiak et al. 1988; Fernet et al. 1988; Courtney and Fernet 1989, Courtney and Fernet 1990, Courtney and Fernet 1991; Helwig and Courtney 1993; Courtney 1993) to assess the effectiveness of these regulations.

In August 1999, Alberta Environment and RL&L Environmental Services Ltd. (RL&L) conducted a fisheries study to update the status of the sportfish populations in the Lower Bow River. The results of this study were compared with the previous data of the 1980's and early 1990's in RL&L (2000). Recognizing that the continuation of the monitoring program is necessary to assess the impact of fishing regulations and increasing recreational use on the Lower Bow River sportfish populations, Alberta Environment contracted RL&L to assist in a follow-up survey in August 2000. Similar to the objectives outlined in RL&L (2000), the main requirements of the present study were to:

- derive population estimates (with confidence limits) for different size-classes of brown trout, rainbow trout, and mountain whitefish;
- calculate catch-per-unit-effort (CPUE) indices for these size-classes and species;
- determine life history data (length frequencies, length-weight regressions, condition factors, fork length to total length conversion factors, age-length relationships, injury indices, etc.) for the target species;
- identify possible changes in fish populations over time by comparing the current data to corresponding data from previous years; and,
- assess statistical assumptions inherent in mark/recapture methods (e.g., fish movement).

2.0 METHODS

2.1 STUDY AREA AND SAMPLE PERIOD

The study area was located on the Bow River in the City of Calgary (between Kms 49.5 and 53.5 downstream of the Bearspaw Dam) and corresponded to the same 4-km river section assessed in 1999 (Figure 2.1).There are no major named tributaries to the Bow River within this river section. This section was further divided into four 1-km sub-sections to assess fish movements within the study area. The upstream and downstream boundaries of each section were geo-referenced (UTM - NAD27) using a Garmin 45 GPS unit. The mean width (m) and area (ha) of the study sections were measured from air photos (1:20 000 scale) taken on 17 July 1998. As reported in RL&L (2000), the total sampled area was approximately 36 ha within the 4-km study section. The study site was accessed using the boat launch at Fish Creek Provincial Park, located upstream of the Highway 22X bridge. The field sampling was conducted between 21 and 24 August 2000.

2.2 RIVER CONDITIONS

Water temperature (digital thermometer, ±0.1 °C) and conductivity (Oakton TDSTestr3, ±2%FS) were measured in the Bow River within the study area each day during the study period. Discharge information for the Bow River at Calgary (Water Survey of Canada Station 05BH004) was obtained from the Forecasting Section of the Alberta Environment Water Sciences Branch.

2.3 FISH CAPTURE AND ASSESSMENT

Similar to the methods employed in 1999 (RLL 2000), fish sampling was conducted by members of RL&L and Alberta Environment, using two three-person crews and two jet-drive electrofishing boats. The boats used were a Smith-Root SR18 and a Roughneck Tunnelhull; each boat was equipped with a GPP 5.0 electrofisher unit and two fixed-boom anode arrays. The electrofisher units were set at a frequency of 30 Hz and a pulse width of 3.5 ms, yielding a total power output ranging from 3.5 to 5.0 A. These settings were determined to be the most efficient for capturing large fish without inducing injuries. Pulse widths of 60 Hz were not used as they may have resulted in a higher incidence of injury (Snyder 1995).

Sampling within each section was conducted along both banks of the river. To ensure optimum coverage, the boat operators manoeuvred the boats in a downstream direction. In areas where islands were encountered (Sections 2 and 3), sampling was conducted in the channel where sufficient depth and better fish habitat existed. Each section of the study area was sampled twice daily.

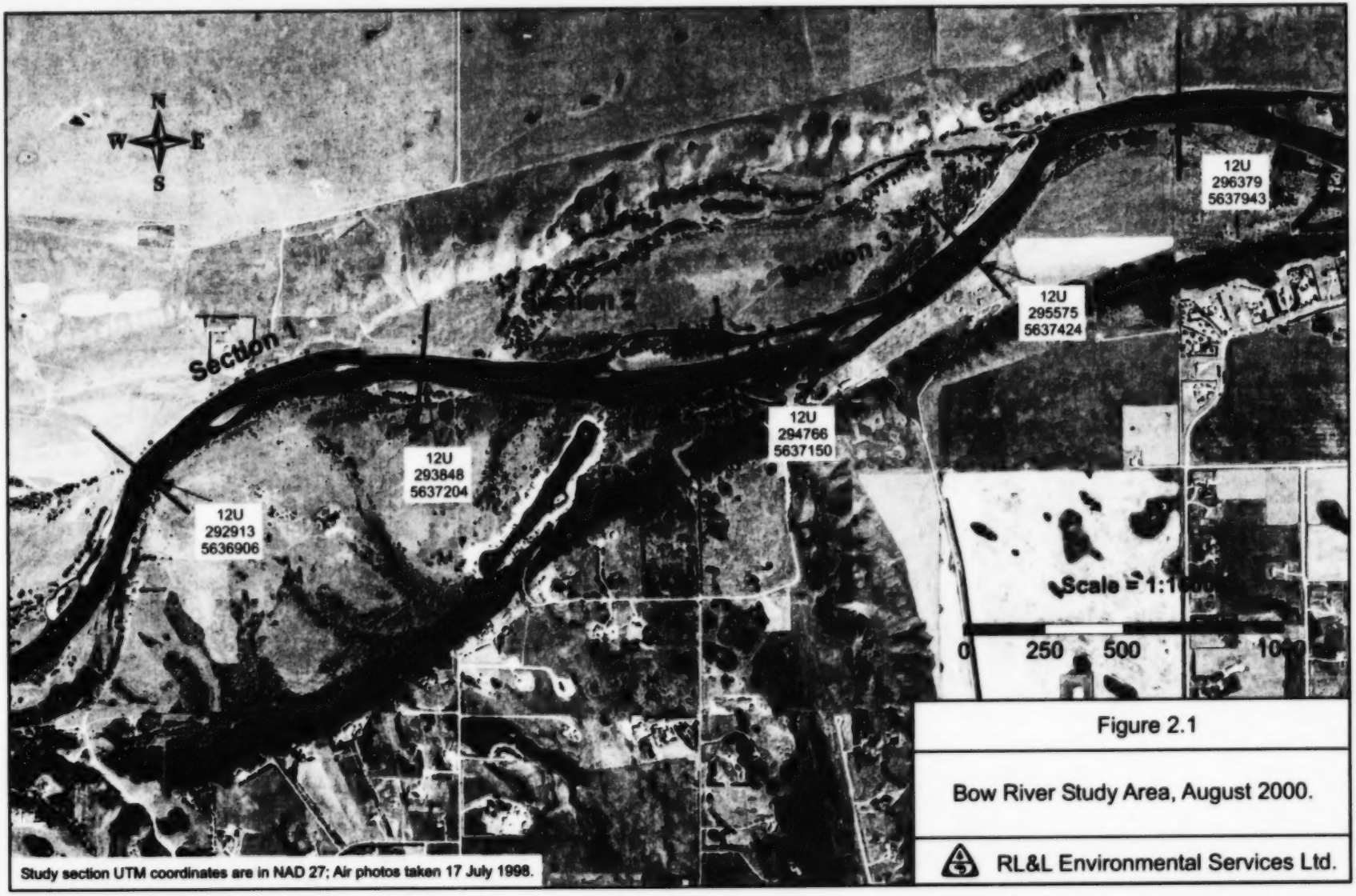

Figure 2.1

Bow River Study Area, August 2000.

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The captured fish were retained in an on-board aerated holding tank prior to processing. Once sampling of a sub-section was completed, the fish were transferred into aerated tanks for processing by two crews on two additional boats.

All life history data (Appendix A, Table A1) were collected by Alberta Environment personnel. Fork length and total length of the captured fish were measured in millimetres (±1 mm); weights were measured in grams (±5 g), using a Pelouze Model PE10CN digital read-out scale. Life history information was collected from all fish, including recaptures. Most trout and mountain whitefish greater than 200 mm in fork length were tagged at the base of the dorsal fin with orange 'T-bar' anchor tags (Floy® Model FD-94). Smaller trout and mountain whitefish were marked by clipping the pectoral or pelvic fins. Different fins were clipped on each sampling day to identify the date of original capture (Table 2.1). In addition to the "date" clip, each small fish was marked on the caudal or adipose fin with a hole punch; the position of the punched hole indicated capture location (Table 2.1).

Table 2.1 Fin marking procedures for identifying capture date and location during the Bow River fish population assessment, August 2000.

Code	Capture Date	Fin Clip	Code	Capture Location	Fin Punch
A	21 August	Left pectoral fin	1	Section 1	Upper lobe of caudal
B	22 August	Right pectoral fin	2	Section 2	Middle of caudal
C	23 August	Left pelvic fin	3	Section 3	Lower lobe of caudal
D	24 August	Right pelvic fin	4	Section 4	Adipose clip

Scale samples were collected from representative individuals of each species. Otoliths (and associated scales) were also collected by Alberta Environment personnel on a subsequent inventory program, and were used to validate scale ageing. Otoliths were not taken during the population study to prevent biases in the marked cohort. Each fish was examined for evidence of external damage and injuries (e.g., hook damage from angling activities) prior to release. The severity of each injury was categorized as low, medium or high. All fish were released near shore at the mid-point of the corresponding capture sub-section in order to reduce possible biases associated with fish movements between sections.

2.4 DATA ANALYSIS

2.4.1 Size-Classes

The size-classes were based on the criteria developed by Courtney (1993) and those reported in RL&L (2000). The "large" size-classes corresponded to the size limits established by the current Alberta Fishing Regulations (i.e., maximum 40 cm total length for trout species and minimum 30 cm total length for mountain whitefish). The "medium" size-classes were consistent with those reported in Courtney (1993) and RL&L (2000). Based on the total length versus fork length regression equations (Courtney 1993), the "large" size-classes included brown trout, rainbow trout, and mountain whitefish that were greater than 388, 380, and 280 mm in fork length, respectively. The difference in fork length between brown trout and rainbow trout is attributed to the deeper fork of the caudal fin in rainbow trout.

2.4.2 Catch Data

All CPUE calculations were based on brown trout, rainbow trout and mountain whitefish greater than 150 mm in fork length. Separate CPUE values for each species were calculated for each study section and for each size-class of fish. The CPUE indices were presented in this report as fish/km and fish/1000 s to allow comparisons with previous years data. Recaptured marked fish were included in the database used to generate CPUE values.

2.4.3 Life History

Fork length data were presented as length frequency histograms based on 10 mm size intervals. The relationship between fork length and total length was calculated using least squares regressions to allow conversions between the two measurement criteria. Relationships between length and weight were presented as length-weight regressions (log fork length vs log weight) and as Fulton's condition factor calculated according to Ricker (1975). The length and weight calculations included all fish captured for the first time; marked recaptures were excluded from the calculations as they would have biassed the size characteristics of the populations.

Approximately 100 fish of each target species were aged. Fish were aged according to protocols outlined in Mackay et al. (1990). All ageing structures were read by a minimum of two qualified personnel. Magnified scale images were produced to facilitate the ageing process.

2.4.4 Population Estimates

The population estimates were calculated using the MARK software (White and Burnham 1999). This software is available at www.cnr.colostate.edu/%7egwhite/mark/mark.htm and contains the CAPTURE program used to calculate population estimates in 1990-1992. The fish data were summarized into mark-recapture events and fish encounter history files were generated according to procedures described in White and Burnham (1999). The encounter history files were subsequently grouped by species and size-classes. The population size analyses were based on eight sampling events. The output of the MARK software included an estimate of population size, standard error, coefficient of variation, upper and lower 95% confidence intervals, and capture probabilities for each tested group.

During the 1982-1988 period, population estimates of the Bow River fish were generated using the Darroch estimator (White et al. 1982). During the more recent studies (1990-1992 and 1999), population estimates were derived using the Null method (Otis et al. 1978) in addition to the Darroch estimator. Similarly, the present study utilized both the Darroch and Null methods to enable comparisons with previous data and to allow for a more complete assessment of population size changes over the past two decades.

Population estimates were generated separately for three size-classes of brown trout (150-250, 251-388, and >388 mm in fork length) and rainbow trout (150-250, 251-380, and >380 mm in fork length) to be consistent with the size-classes used in the 1990-1992 and 1999 population studies. Mountain whitefish population size in the study area was estimated for the first time in 1999; these estimates were generated for two size-classes (200-280 and

>280 mm in fork length). During the present study, mountain whitefish population estimates were calculated for three size-classes (150-199, 200-280, and >280 mm in fork length) to allow for more accurate determination of the size of the youngest cohorts.

In addition to generating estimates for separate size-classes, the recapture data were pooled for each species to estimate the population size of all size-classes combined. All population estimates are expressed as the number of fish/km and fish/ha to allow comparisons to previous studies.

Recaptured fish were assessed to determine the distances travelled between the original capture and recapture locations during subsequent sampling runs (infrequent recaptures of fish that were marked during the same sampling run were ignored). These calculations were used to assess movements of fish out of the study area. This determined the potential bias in the population estimates caused by a violation of the closure assumption inherent in mark-recapture methodologies. The movement data were summarized for all size-classes of brown trout, rainbow trout, and mountain whitefish; they were not calculated for individual size-classes because of limited sample sizes of recaptured fish. Movements of fish recaptured twice were considered as two separate events.

The encounter histories of fish that were fin clipped (i.e., not marked with a unique tag number) were generated by matching the clip code information and fish size data upon recapture to the original capture information.

3.0 RIVER CONDITIONS

Mean daily discharge of the Bow River in Calgary during the fish capture events in 2000 decreased from 89.2 m^3/s on 21 August to 77.2 m^3/s on 24 August (Alberta Environment, Water Sciences Branch). The flows in 2000 were lower compared to the long-term average flows during 21-24 August over a twenty-year period between 1975 and 1994 (Environment Canada 1996), and considerably lower than the conditions in 1999.Water temperatures in the Bow River during the study period (21 to 24 August 2000) ranged between 14.4 and 18.7°C, whereas water conductivity varied between 271 and 305 µS (Table 3.1).

Table 3.1 Water temperature, conductivity, and mean daily discharge of the Bow River during the fish population assessment, August 2000.

Date	Water Temperature (°C)	Conductivity (S)	Mean Daily Discharge (m^3/s)	
			2000 [a]	1975 - 1994 [b]
21 August	14.8 - 17.9	275 - 296	89.3	107
22 August	14.4 - 18.6	273 - 293	84.8	105
23 August	15.7 - 18.7	271 - 291	79.7	106
24 August	16.5 - 18.0	291 - 305	77.2	103

[a] preliminary data from Alberta Environment - Water Science Branch.

[b] long-term (20-yr) average calculated from mean daily discharges (Environment Canada 1996).

During the 1975-1994 period, mean monthly flows of the Bow River in Calgary were highest in June (174 m^3/s) and considerable lower in August (113 m^3/s). Comparison of mean monthly flows in August during the years when previous population estimates in the Bow River were carried out indicated that higher than "normal" flows occurred in 1990, 1991 and 1999 (August means of 135, 158 m^3/s and 177 m^3/s, respectively), whereas lower than "normal" flows occurred in 1982-1985, 1988, 1992, and 2000 (August means ranged from 88 to 106 m^3/s).

Daily flows during the present study were approximately 21% lower than the 'normal' flows during the corresponding dates between 1975 and 1994 (Table 3.1). This may have increased the sampling efficiency of the electrofishing operations by concentrating the fish in deeper holding areas. As a result of the reduced flows in 2000, water temperature and aquatic macrophyte abundance were higher than in 1999.

The mean width (m) and area (ha) of the study sections were measured from air photos (1:20 000 scale) taken on 17 July 1998. As reported in RL&L (2000), the total sampled area was approximately 36 ha within the 4-km study section.

4.0 SPECIES COMPOSITION AND RELATIVE ABUNDANCE

4.1 SPECIES COMPOSITION

In total, 1381 sportfish were captured during the August 2000 population study of the Bow River (Table 4.1). Mountain whitefish (n=654) was the predominant species in the catch, contributing almost half (47.4%) to the total catch. Rainbow trout (n=441) and brown trout (n=278) contributed 31.9% and 20.1%, respectively, to the total catch. Other sportfish species in the catch included burbot (n=4) and bull trout (n=4). Non-sportfish species (longnose sucker and white sucker) were frequently observed in the study area but were not enumerated during the study.

Table 4.1 Sportfish species captured in the Bow River, August 2000.

Species		Number Captured [a]	Percent Composition
Mountain whitefish	*Prosopium williamsoni* (Girard)	654	47.4
Brown trout	*Salmo trutta* Linnaeus	278	20.1
Rainbow trout	*Oncorhynchus mykiss* (Walbaum)	441	31.9
Bull trout	*Salvelinus confluentus* (Suckley)	4	0.3
Burbot	*Lota lota* (Linnaeus)	4	0.3
TOTAL		1381	100.0

[a] Includes recaptured fish.

4.2 RELATIVE ABUNDANCE

Relative abundance data for each size-class of brown trout, rainbow trout, and mountain whitefish in the study area are summarized as catch-per-unit-effort (CPUE) indices for each sampling day and study section (Appendix B, Figures B1 to B3). The overall CPUE values for all size-classes combined are presented in Figure 4.1. The sampling effort remained relatively constant during each sampling run (ranged from 4461 to 5848 seconds per 4-km run along both banks); therefore, CPUE indices are presented as number of fish captured per 1-km section sampled (both banks included). CPUE indices expressed as number of fish per 1000 seconds of electrofishing time are included in Appendix B, Tables B1 to B4.

In general, catch rates for each species did not vary greatly between study sections and between days. Catch rates for brown trout ranged between 3.5 and 14.5 fish/km (mean of 8.7 fish/km), regardless of sampling day or study section (Appendix B, Table B2). Catch rates for brown trout were highest in Section 1 during the first three days, but highest in Section 4 on the fourth day. Lower catch rates were frequently observed in Section 2. The catch rates in Section 1 decreased steadily over the four day period.

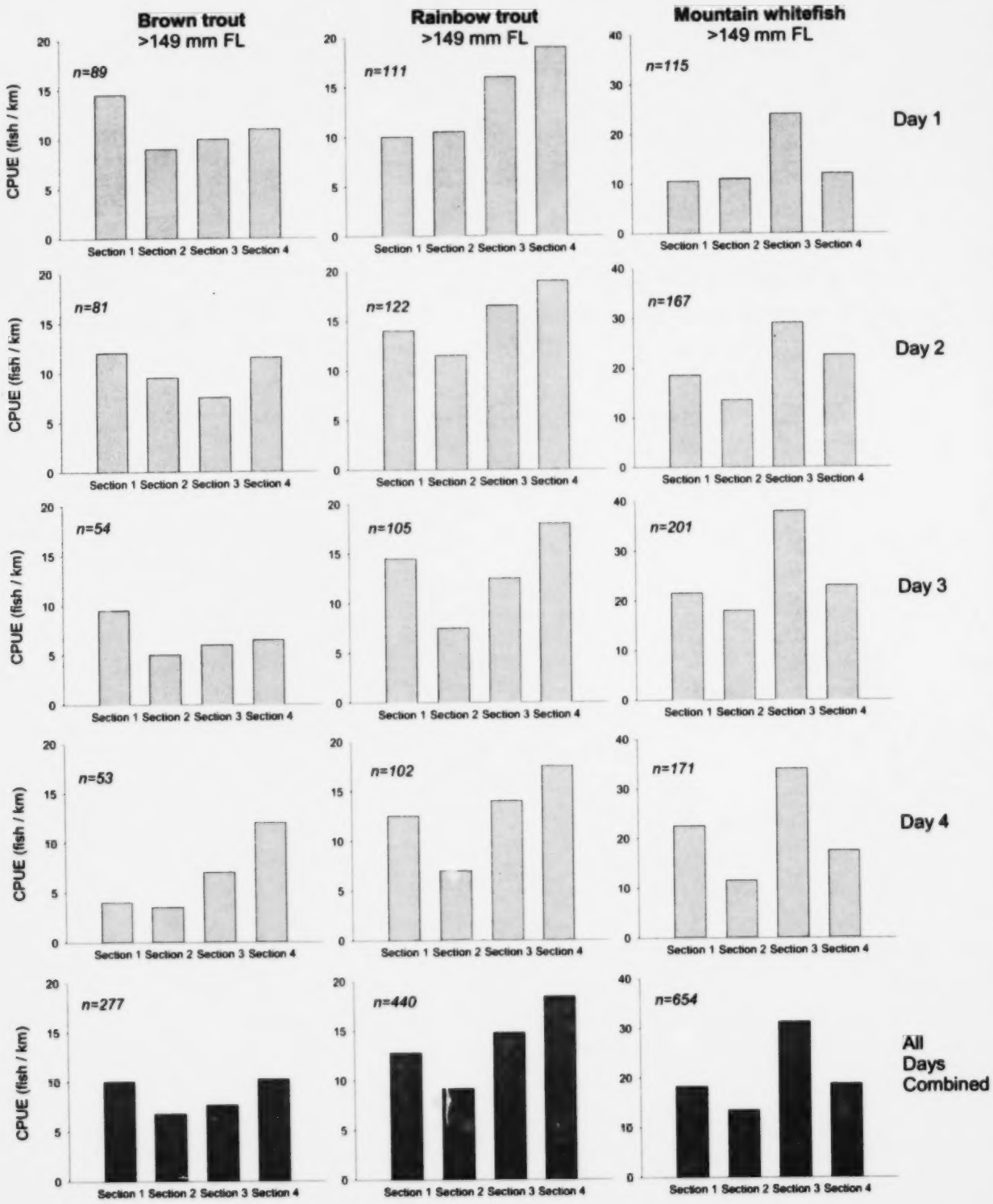

Figure 4.1 Relative abundance, expressed as catch-per-unit-effort (CPUE), of brown trout, rainbow trout, and mountain whitefish captured in the Bow River, August 2000 (note changes in y-axis scales).

Catch rates of rainbow trout were higher and less variable in 2000 (7.0 to 19.0 fish/km; mean of 13.8 fish/km; Appendix B, Table B3) than in 1999 (1.5 to 12.5 fish/km; mean of 5.9 fish/km; RL&L 2000). The catch rates were similar between days. Catches in Section 4 were always highest and in Section 2 were frequently the lowest.

Mountain whitefish catch rates varied from 10.5 to 38.0 fish/km (mean of 20.4 fish/km). Mountain whitefish catch rates were generally highest in Section 3 and lowest in Section 2 (Appendix B, Table B4). Section 3 contains a rapid/ deep-run habitat complex, which may have provided more suitable mountain whitefish habitat than the other sections under the low flow conditions.

The overall mean catch rates in 2000 (all study sections and sampling days combined) are compared to the previous data from 1990 to 1999 in Table 4.2 and Figure 4.2. To be consistent with the units presented in Courtney (1993), the mean CPUE indices are presented as the number of fish captured per 1000 seconds of electrofishing effort. Standard deviations of the means are presented to describe daily variability in the catch rates.

Table 4.2 Mean catch per unit effort (CPUE expressed as fish/1000s) and standard deviation (SD) for sportfish captured in the Bow River in August 2000 compared to similar data from 1990-1992 (Courtney 1993) and 1999 (RL&L 2000).

Study Year	Parameter	Brown Trout Size-Class (mm FL)			Rainbow Trout Size-Class (mm FL)			Mountain Whitefish Size-Class (mm FL)		
		150-250	251-388	>388	150-250	251-380	>380	150-199	200-280	>280
2000	Mean	3.03	1.20	2.75	4.60	1.19	5.23	1.52	7.01	7.72
	SD	*1.18*	*0.29*	*0.80*	*0.95*	*0.34*	*0.47*	*0.78*	*2.01*	*2.05*
1999	Mean	3.36	1.11	5.41	0.34	0.40	4.79	-	10.26	4.80
	SD	*0.14*	*0.45*	*1.03*	*0.23*	*0.20*	*0.62*	-	*1.84*	*2.60*
1992	Mean	8.11	5.00	1.46	4.72	3.08	5.09	-	-	-
	SD	*4.15*	*2.03*	*0.87*	*2.14*	*0.17*	*0.57*	-	-	-
1991	Mean	9.33	1.92	0.48	0.43	2.10	2.82	-	-	-
1990	Mean	4.60	0.30	1.20	5.00	0.90	3.90	-	-	-

Catch rates of brown trout in the two smaller size-classes were comparable to those reported in 1999; however, the catch rates of the adult size-class (>388 mm size-class) were two times lower in 2000 than in 1999. CPUE values for the juvenile size-class (150-250 mm) remained considerably lower in 1999 and 2000 than those reported by Courtney (1993) in the early 1990's. Catch rates of the intermediate size class fell within the range of values presented by Courtney (1993) and RL&L (2000). The variability in rates may be related to changes in spawning success of individual cohorts or other environmental factors, such as flow regime.

Catch rates of juvenile rainbow trout (150-250 mm) were approximately thirteen times higher in 2000 than in 1999. A similar dramatic increase was observed in the catch rates between 1991 and 1992. The catch rate of rainbow trout in the intermediate size class (251-380 mm) also increased in 2000 compared to 1999. These differences may be

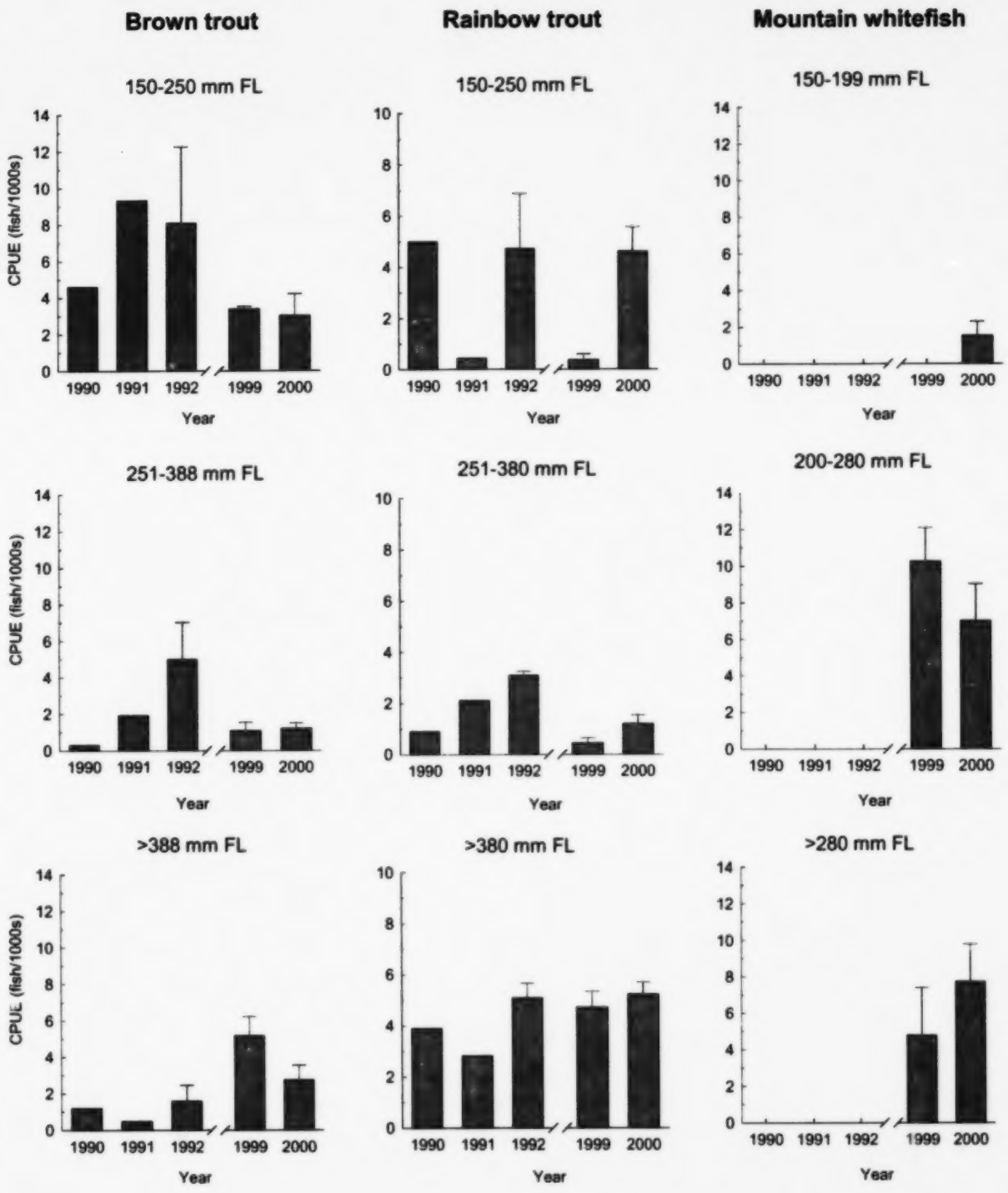

Figure 4.2 Comparison of brown trout, rainbow trout, and mountain whitefish catch-per-unit-effort (CPUE) indices recorded in the Bow River during 1990-1992 (Courtney 1993), 1999 (RL&L 2000), and during the present study. The histogram bars indicate mean CPUE values; the "T's" above the bars represent standard deviations of the means (note changes in y-axis scales).

attributed to changes in discharge levels in the Bow River during the sampling periods, as higher than normal flows experienced in 1999 may have resulted in lower capture efficiency for the smaller size-classes. The increase in catch rates of juvenile rainbow trout in 2000 may also be attributed to increased recruitment in 1999. Adult rainbow trout (>380 mm) were captured at approximately the same rate in 2000 as during the previous studies.

Mountain whitefish capture rates were lower in the intermediate size-class (200-280 mm) in 2000 compared to 1999; however, the opposite trend was noted for the large size-class (>280 mm). This suggested that the numerous 200-280 mm size class from 1999 contributed to the higher adult catches in 2000.

5.0 LIFE HISTORY DATA

5.1 SIZE DISTRIBUTION

Brown trout captured in the study area (n=265 excluding recaptured fish) ranged from 178 to 624 mm in fork length (Appendix B, Table B5). Similar to the catch in 1999, the length-frequency distribution exhibited two distinct size-classes (Figure 5.1). More than one-third (38.9%) of the catch was comprised of fish larger than 388 mm in fork length (i.e., fish protected by the current angling regulations). Juvenile fish between 178 and 279 mm in fork length were also well represented and contributed 54.8% to the total catch (Appendix B, Table B6). In contrast, fish between 280 and 388 mm were captured infrequently (6.4% of total catch). The length-frequency distribution in 2000 indicated more juvenile fish and fewer adults than in 1999; low numbers of fish in the intermediate size-class were observed during both years.

Rainbow trout (n=411) ranged from 158 to 590 mm in fork length (Appendix B, Table B5). The length-frequency distribution of rainbow trout indicated a bimodal distribution (Figure 5.1). Fish greater than 380 mm in fork length contributed much less to the total catch in 2000 (46.2%) than in 1999 (84.3%). These fish represented the size-class protected by the current regulations. The portion of the population in the 150 to 250 mm size-class was much higher in 2000 than in 1999 (42.8% and 6.5%, respectively). The rainbow trout size distribution in 2000 exhibited a high contribution of small fish (likely due to a strong 1999 cohort) and a minor contribution of fish in the 251 to 380 mm size class. A similar length-frequency distribution was recorded in 1990 (Courtney 1993).

Mountain whitefish (n=613) ranged between 155 and 465 mm in fork length (Appendix B, Table B5). The length-frequency distribution exhibited three distinct modes, which likely corresponded to age-classes (Figure 5.1). The most abundant size-class (155-239 mm) was dominated by yearling fish and contributed 43.3% to the total catch. Mountain whitefish larger than 280 mm in total length (i.e., fish legal for harvest under current regulations) contributed 47.3% to the total catch.

5.2 FORK LENGTH - TOTAL LENGTH RELATIONSHIPS

Relationships between fork length (FL) and total length (TL) were plotted for each of the target species to allow conversions between these two measurements methods (Figure 5.2). The regression equations were as follows:

Brown trout	TL = 1.006 FL + 7.672	r^2 = 0.999	n=263
Rainbow trout	TL = 1.034 FL + 3.431	r^2 = 0.999	n=407
Mountain whitefish	TL = 1.061 FL + 3.112	r^2 = 0.998	n=613

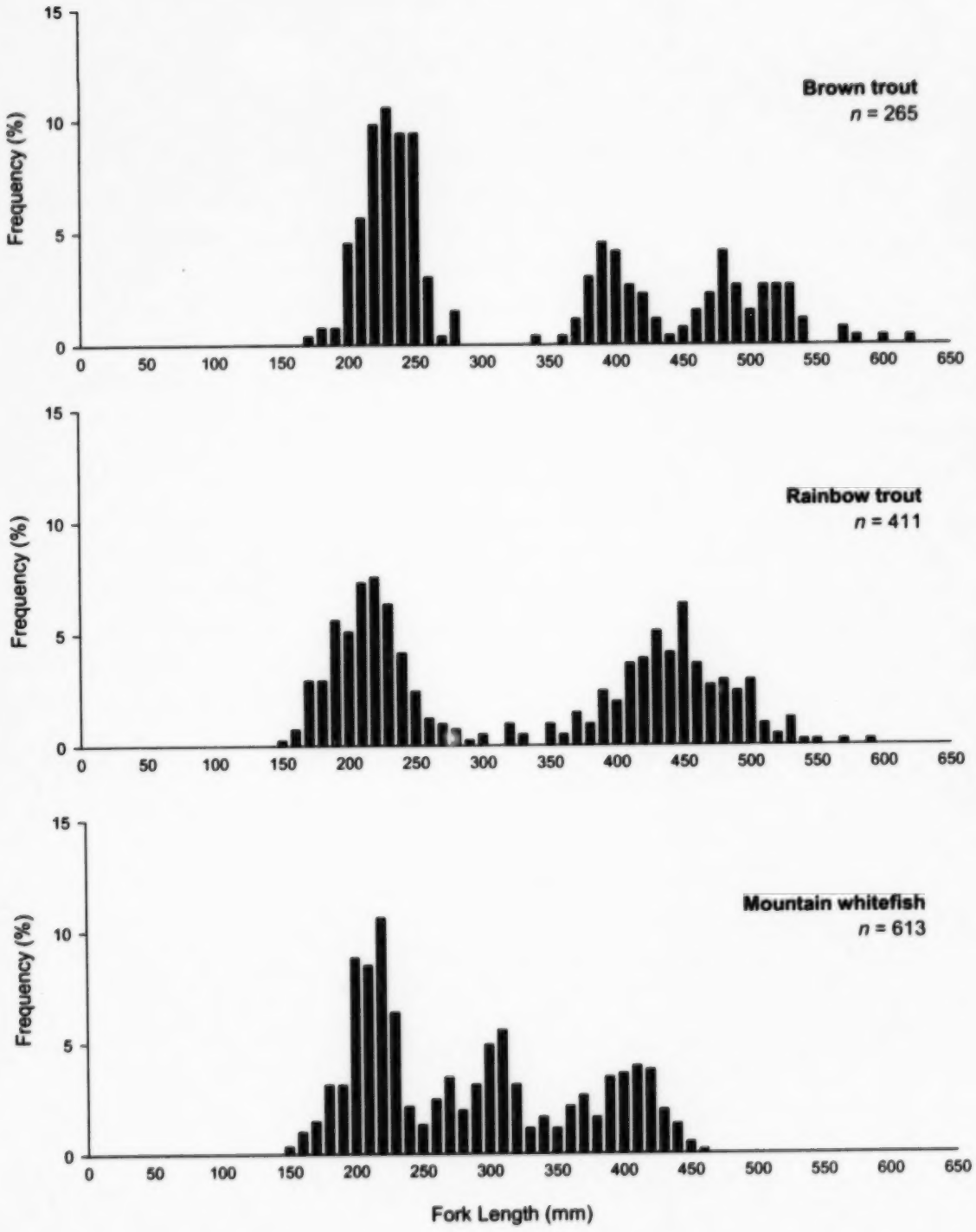

Figure 5.1 Length-frequency distribution of brown trout, rainbow trout, and mountain whitefish captured by boat electrofishing in the Bow River, August 2000.

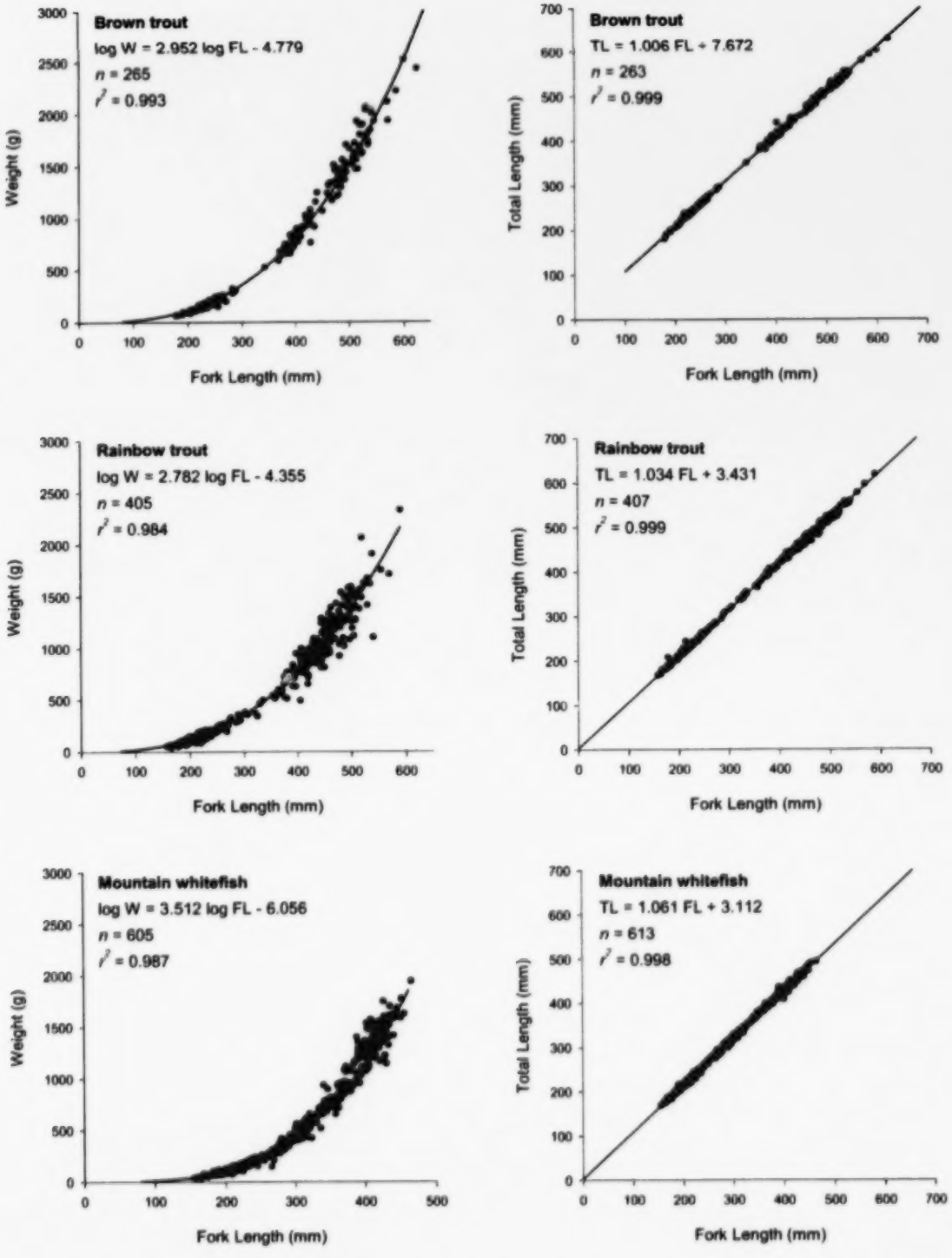

Figure 5.2 Fork length-weight regressions and fork length-total length relationships for brown trout, rainbow trout, and mountain whitefish in the Bow River, August 2000.

5.3 LENGTH-WEIGHT RELATIONSHIPS

The relationships between fork length (FL) and weight (W) for brown trout, rainbow trout, and mountain whitefish are illustrated in Figure 5.2. The calculated regression lines for each species were as follows:

Brown trout	log W = 2.952 log FL - 4.779	r^2 = 0.993	n=265
Rainbow trout	log W = 2.782 log FL - 4.355	r^2 = 0.984	n=405
Mountain whitefish	log W = 3.512 log FL - 6.056	r^2 = 0.987	n=605

Similar length-weight relationships for the trout species were recorded during the previous studies of the Bow River (Courtney 1993; RL&L 2000).

The mean condition factors for the three target species are presented in (Appendix B, Table B5). The mean condition factors for brown trout and mountain whitefish in the Bow River in 2000 were similar as in 1999. In contrast, adult rainbow trout (>380 mm fork length) were heavier at a given length in 2000 than in 1999 (mean condition factors of 1.17 and 1.12, respectively); this difference was statistically significant (t-test p>0.05). As in 1999, condition factors were lower in the larger size-classes than the smaller size-classes for both brown trout and rainbow trout, whereas an opposite trend was recorded for mountain whitefish.

5.4 AGE AND GROWTH

A subsample of analysed ageing structures collected from sportfish in the Bow River during August 2000 consisted of otoliths and/or scales from brown trout (n=97), rainbow trout (n=96), and mountain whitefish (n=102). Age data for individual fish are included in Appendix B, Table B7. Age-length relationships for each species are summarized in Appendix B, Table B8 and plotted in Figure 5.3

Brown trout in the aged sample ranged from 1 to 8 years in age. Age 1 fish exhibited fast growth rates, attaining a mean length of 209 mm near the end of their second year of growth (i.e., late summer 2000). The small mode of the length-frequency distribution of the catch (Figure 5.1) was likely comprised of both Age 1 and Age 2 fish. Based on the aged sample, brown trout protected by the current angling regulations (i.e., fish larger than 388 mm in fork length) include fish of age 3 and older.

Rainbow trout in the aged sample ranged from 1 to 6 years in age (Figure 5.3). Wide variations in the size of Age 2 fish suggested the presence of distinct sub-populations (e.g., some of these fish may spend part of their life cycle in the lower reaches of the Highwood and Sheep rivers). Similar to brown trout, rainbow trout protected by the current angling regulations (i.e., fish larger than 380 mm in fork length) were mostly represented by fish of Age 3 and older.

Mountain whitefish ages ranged from 1 to 13 years in age (Figure 5.3). Growth rates were rapid until Age 2 and slower to Age 5. After Age 5, little growth occurred. Mountain whitefish protected by the current angling regulations (i.e., fish smaller than 280 mm in fork length) were mostly represented by fish of Age 2 and younger.

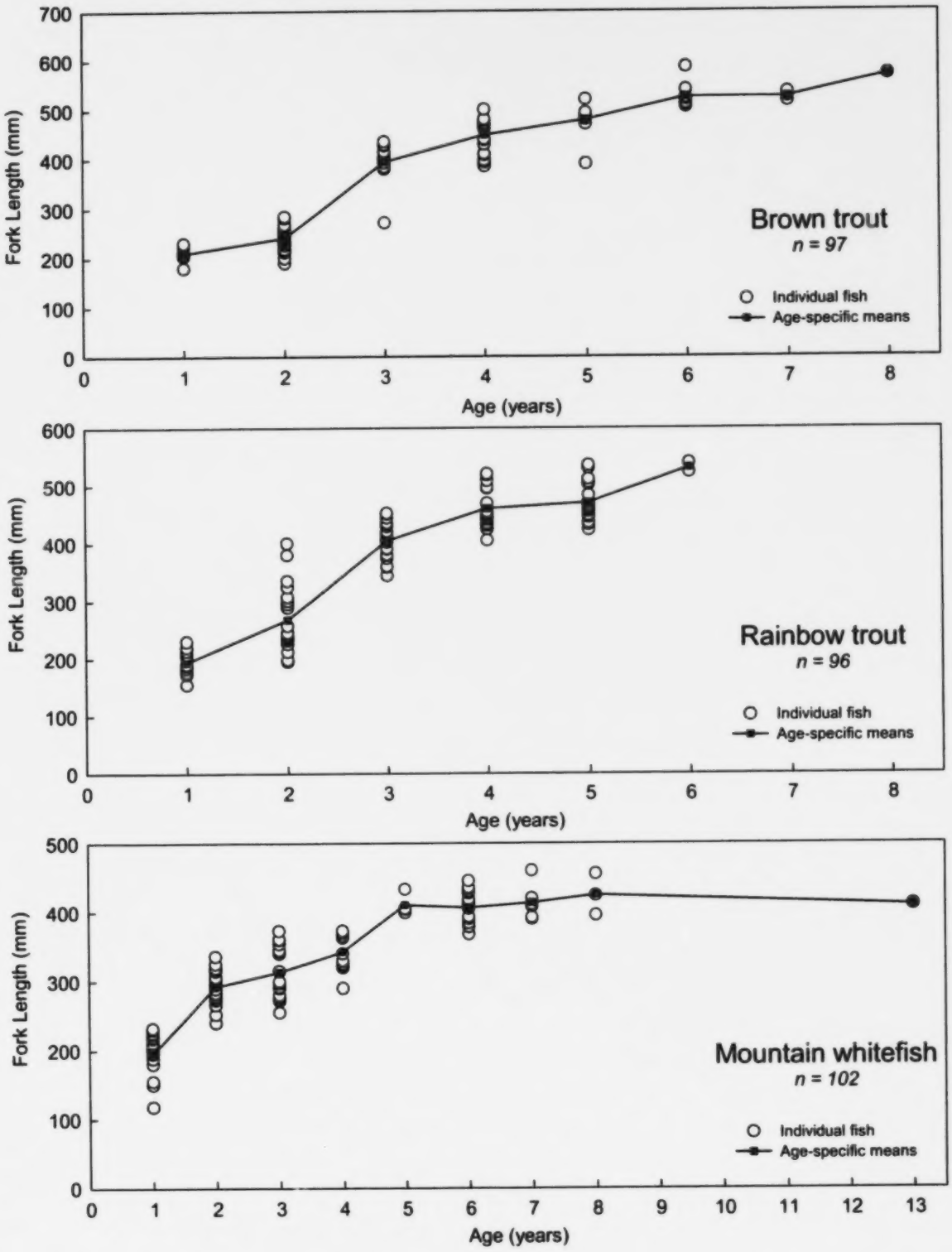

Figure 5.3 Age-length relationships for brown trout, rainbow trout, and mountain whitefish captured in the Bow River, August 2000 (note changes in y-axis scales).

5.5 FISH INJURY INDICES

Data on the incidence of injuries in fish sampled in the Bow River were collected in 2000 to assess the effects of angling on fish health, and to compare with previous studies (Courtney 1993, RL&L 2000). Injury rates for all species in the small size-class were low (<10%; Appendix B, Table B9); however, they were higher than those reported in 1999 (<5%, both species). In the medium size-class, one-third of the rainbow trout were injured, but rates were low in brown trout and mountain whitefish (<7%). The majority of recorded injuries were associated with the larger size-classes of brown trout (21%), rainbow trout (45%), and mountain whitefish (10%) that were most vulnerable to angling pressure.

Hooking related injuries (jaw, gill, head, or eye; Table 5.1, Appendix B, Table B9) in 2000 accounted for more than 91% of all injuries recorded in large brown trout, rainbow trout, and 47% of large mountain whitefish injuries. The incidence of hook related injuries in the large rainbow trout was approximately double of those recorded in previous studies (1990-92, 1999 data). The second most common injury type in mountain whitefish and rainbow trout during the present study was attributed the electrical current applied during sampling. The severity indices recorded of injuries are summarized in Table 5.1 and in Appendix B, Table B9. Injuries due to hooking were frequently categorized as more severe than injuries caused by disease, predation and electrofishing.

Table 5.1 Number of injured fish and causes recorded during fish population assessment in the Bow River, August 2000.

		Brown Trout				Rainbow Trout				Mountain Whitefish			
		150-250	251-388	>388	Total	150-250	251-380	>380	Total	150-199	200-280	>280	Total
Fish Examined		116	46	103	265	176	45	190	411	55	268	290	613
Fish Injured		9	3	22	34	16	15	86	117	0	4	28	32
Injury Rate (%)		*7.8*	*6.5*	*21.4*	*12.8*	*9.1*	*33.3*	*45.3*	*28.5*	*0.0*	*1.5*	*9.7*	*5.2*
Total No. Injuries		***11*** [a]	***3***	***23***	***37***	***18***	***17***	***99***	***134***	***0***	***4***	***28***	***32***
Cause/Severity [b]													
Disease	L							1.0	0.8				
	M							1.0	0.8				
Total								***2.0***	***1.5***				
Electro-fishing	L					16.6		5.1	6.0		75.0	17.9	25.0
	M											7.1	6.3
	H											7.1	6.3
Total						***16.6***		***5.1***	***6.0***		***75.0***	***32.1***	***37.5***
Hooking	L	63.6	66.7	52.2	56.8	38.9	35.3	37.4	37.3		25.0	17.9	18.8
	M	18.2	33.3	26.1	24.3	22.2	17.7	16.2	17.2			21.4	18.8
	H	18.2		13.0	13.5	22.2	47.1	38.4	37.3			10.7	9.4
Total		***100.0*** [c]	***100.0***	***91.3***	***94.6***	***83.3***	***100.0***	***91.9***	***91.8***		***25.0***	***50.0***	***46.9***
Predation	L			4.3	2.7			1.0	0.7			14.3	12.5
	H			4.3	2.7							3.6	3.1
Total				***8.7***	***5.4***			***1.0***	***0.7***			***17.9***	***15.6***

[a] Fish with multiple injuries are reported separately for each injury cause.
[b] L = Low; M = Moderate; H = High.
[c] Percentage of total number of injuries.

The overall incidence of injuries in 2000 was highest in rainbow trout (28.5%) and considerably lower in brown trout and mountain whitefish (12.8 and 5.2%, respectively). These injury rates were higher than those recorded in 1999 (23.0%, 6.2%, and 3.0% for rainbow trout, brown trout, and mountain whitefish, respectively; RL&L 2000). The increase in injury rates may be attributed to more intensive recording procedures during the present sampling program and/or increased angling pressure in the lower section of the Bow River.

6.0 POPULATION ESTIMATES

Brown trout, rainbow trout, and mountain whitefish population estimates for the lower Bow River were calculated using both the Darroch estimator and the Null method (see Section 2.4.3). This allowed comparisons to the studies in 1982-1992 (Darroch estimator) and 1990-1992 (Null method). Both estimates were based on the same mark and recapture data (summarized in Table 6.1); they were calculated separately for each size-class and species. The detailed encounter histories generated from these data and used as input files for the MARK software are presented in Appendix C, Table C1.

Table 6.1 Number of fish marked and recaptured during fish population assessment in the Bow River, August 2000.

Species	Size-Class (mm FL)	Number of Fish Marked	Number of Recaptures	Recapture Rate (%)
Brown trout	150-250	116	4	*3.4*
	251-388	46	2	*4.3*
	>388	102	6	*5.9*
	Total	**264**	**12**	***4.5***
Rainbow trout	150-250	173	7	*4.0*
	251-380	44	2	*4.5*
	>380	189	20	*10.6*
	Total	**406**	**29**	***7.1***
Mountain whitefish	150-199	55	2	*3.6*
	200-280	268	14	*5.2*
	>280	276	21	*7.6*
	Total	**599**	**37**	***5.4***

In total, 264 brown trout, 406 rainbow trout, and 599 mountain whitefish were marked during the study. Recapture rates were similar between species and size-classes and ranged from 3.4% (brown trout 150-250 mm size-class) to 10.6% (rainbow trout >380 mm). Using all size-classes combined, the recapture rate was highest for rainbow trout (7.1% of marked fish), intermediate for mountain whitefish (5.4%), and lowest for brown trout (4.5%). The recapture rates for rainbow trout and mountain whitefish in 2000 were similar to those reported in 1999; however, the brown trout recapture rate in 2000 was approximately three times lower than in 1999 (12.1%; RL&L 2000). The reasons for this decrease in the brown trout recapture rate are unknown, but may be related to low flows and/or fish movements to other sections. The population estimates derived from the mark-recapture statistics are presented separately for each species in the following subsections.

6.1 BROWN TROUT

The population estimates for all size-classes of brown trout within the 4-km study section in the Bow River derived using both the Darroch and Null methods were very similar (2638 and 2696 fish, respectively; Table 6.2). The low recapture rate of 4.5% (Table 6.1) resulted in higher coefficients of variation (i.e., standard error as a percentage of the estimate) and wider 95% confidence intervals around the estimate than in previous studies. As in 1999, the brown trout population within the study section was primarily composed of juveniles between 150 and 250 mm and adults larger than 388 mm in fork length, with the intermediate size-class (251-388 mm) poorly represented. This bimodal distribution of the brown trout size-classes was also suggested by the length-frequency histogram (Figure 5.1).

Table 6.2 Brown trout population estimates for the Bow River, August 2000.

Method	Size-Class (mm FL)	Population Estimate	Standard Error	95% Conf. Int.		Capture Probability	Coefficient of Variation	Fish/km	Fish/ha
				Lower	Upper				
Darroch	150-250	1471	706	636	3655	-	48.0	368	40.3
	251-388	474	315	165	1598	-	66.5	119	13.0
	>388	807	310	412	1708	-	38.4	202	22.1
	All	**2638**	**724**	**1588**	**4522**	-	**27.4**	**660**	**72.3**
Null	150-250	1528	738	656	3816	0.0098	48.3	382	41.9
	251-388	480	323	165	1641	0.0125	67.3	120	13.1
	>388	814	315	414	1731	0.0166	38.7	204	22.3
	All	**2696**	**747**	**1615**	**4646**	**0.0128**	**27.7**	**674**	**73.9**

The 2000 brown trout population estimates are compared to the 1982-1992 and 1999 estimates (calculated by the Darroch method) in Figure 6.1 and to the 1990-1992 and 1999 estimates (calculated by the Null method) in Figure 6.2; the data used to generate these figures are summarized in Appendix C, Tables C2 and C3. Adult brown trout (>388 mm in fork length) appeared to have increased in abundance through the early 1980s and then decreased in the early 1990s. The current population estimate (202 fish/km) suggests that this size-class is nearly twice as abundant as the maximum estimate from previous years (117 fish/km in 1999; RL&L 2000). This increase was likely an artifact caused by lower recapture rates in 2000 relative to 1999 (5.9% and 14.8%, respectively). Contrary to the results of the population estimates, the CPUE values (Section 4.2) indicated a decrease in adult brown trout catch rates between 1999 and 2000. These differences may be related to a decrease in available holding habitat between 1999 and 2000 (i.e., due to reduced flows, large brown trout were moving out of the study area in search of suitable habitat).

The population estimates for the small and intermediate size-classes of brown trout (150-250 mm and 251-388 mm) indicated an increase in abundance in 2000 relative to 1999 by approximately three and four times, respectively. Although the magnitude of these increases in population size may be exaggerated due to lower recapture rates in 2000 compared to 1999, corresponding increases in CPUE values also suggest that juvenile brown trout did increase in abundance.

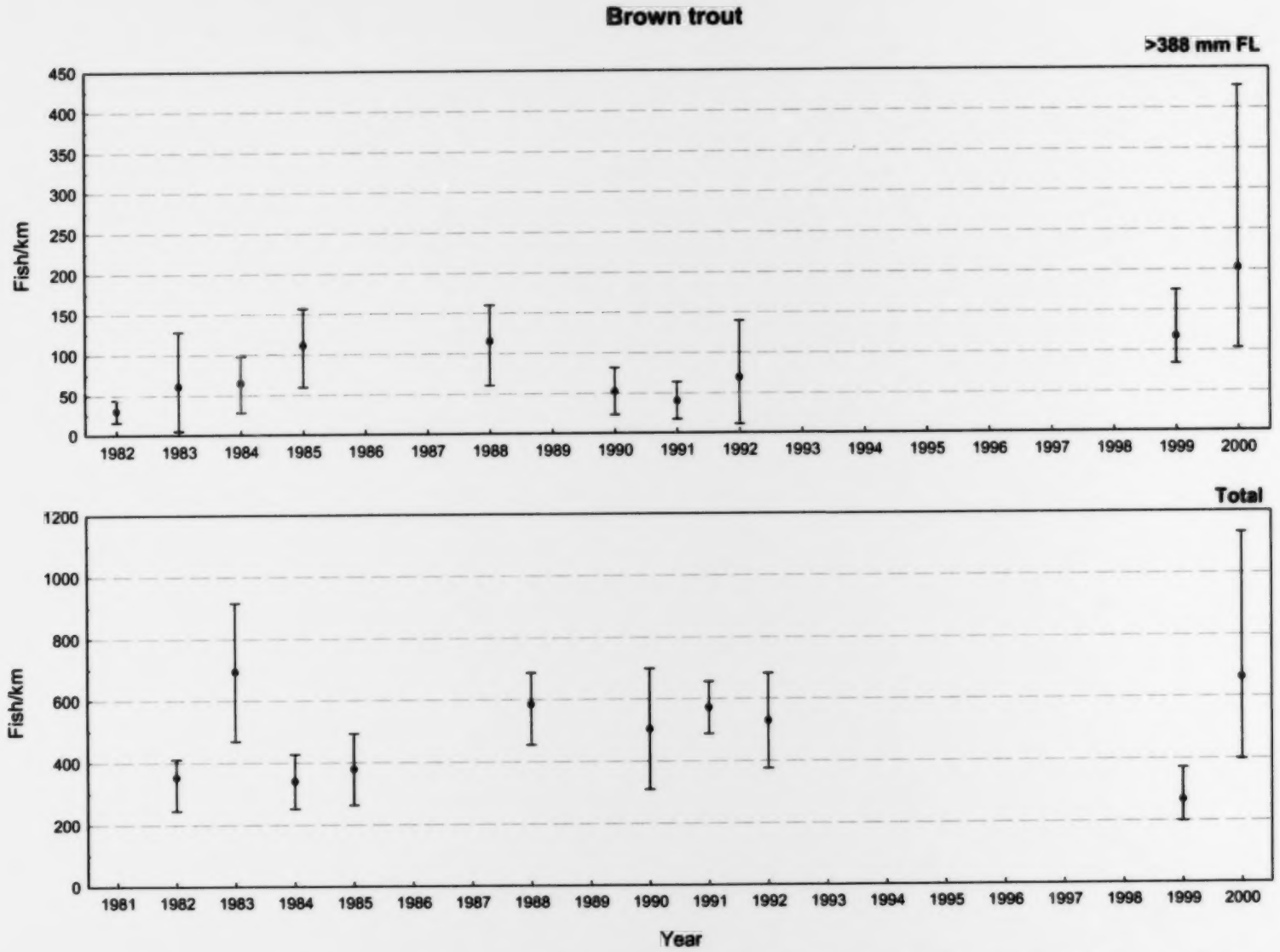

Figure 6.1 Comparison of brown trout population estimates (± 95% confidence intervals) calculated using the Darroch method, 1982 to 2000 (note changes in y-axis scales).

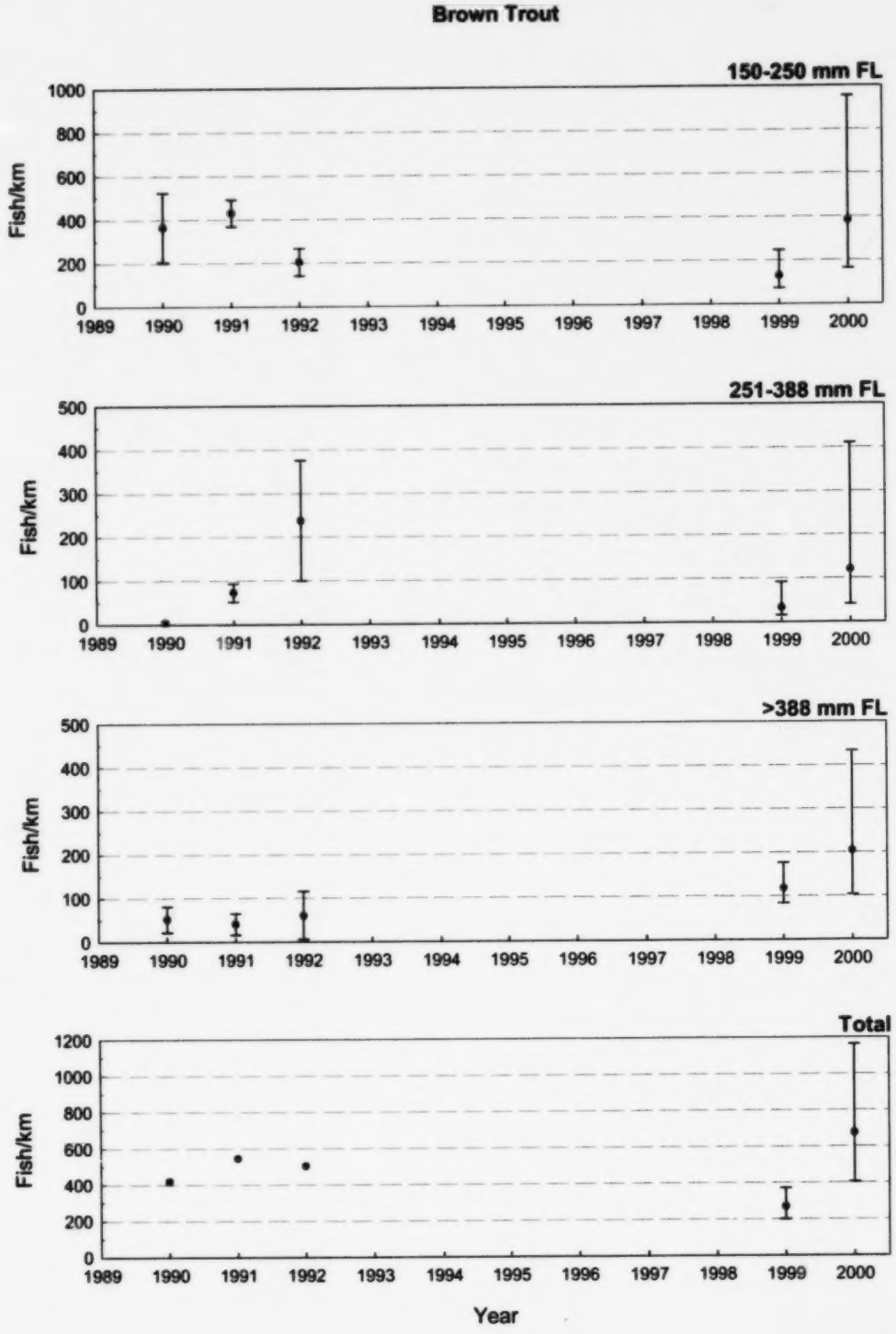

Figure 6.2 Comparison of brown trout population estimates (± 95% confidence intervals) calculated using the Null method, 1990 to 2000 (note changes in y-axis scales).

6.2 RAINBOW TROUT

The 2000 population estimates for all size-classes of rainbow trout within the 4-km study section in the Bow River derived using both the Darroch and Null methods were very similar (2724 and 2735 fish, respectively; Table 6.3). Both estimates were considerably higher than those reported in 1999 (895 and 903, respectively; RL&L 2000). This increase was attributed mostly to the increased abundance of the small and intermediate size classes (150-380 mm), which were poorly represented in the catch in 1999. The current estimates indicate that the rainbow trout smaller than 380 mm in fork length contributed over 72% to the population within the study area; the corresponding proportion in 1999 was approximately 7%.

Table 6.3 Rainbow trout population estimates for the Bow River, August 2000.

Method	Size-Class (mm FL)	Population Estimate	Standard Error	95% Conf. Int.		Capture Probability	Coefficient of Variation	Fish/km	Fish/ha
				Lower	Upper				
Darroch	150-250	1903	673	1002	3782	-	35.4	476	52.1
	251-380	426	281	150	1429	-	66.0	107	11.7
	>380	893	182	618	1347	-	20.4	223	24.5
	All	**2724**	**475**	**1965**	**3855**	-	**17.4**	**681**	**74.6**
Null	150-250	1967	716	1018	3985	0.0114	36.4	492	53.9
	251-380	440	296	152	1503	0.0131	67.3	110	12.1
	>380	897	183	620	1355	0.0291	20.4	224	24.6
	All	**2735**	**478**	**1972**	**3872**	**0.0199**	**17.5**	**684**	**74.9**

The 2000 rainbow trout population estimates are compared to the 1982-1992 and 1999 estimates (calculated by the Darroch method) in Figure 6.3 and to the 1990-1992 and 1999 estimates (calculated by the Null method) in Figure 6.4; the data used to generate these figures are summarized in Appendix C, Tables C2 and C3. The population estimates of rainbow trout in the small and intermediate size-classes were substantially higher in 2000 than in 1999. In contrast, the population estimate for adults was only slightly higher in 2000 than in 1999. The increase in population levels of the small and intermediate size-classes may be due to successful recruitment in 1999 and/or increased capture efficiency for small fish due to reduced flows encountered during the present study (see Section 3.0). The increase in the number of rainbow trout for each size-class between 1999 and 2000 is also supported by the corresponding increase in CPUE values (Section 4.2). The population estimate for all size-classes (684 fish/km), was within the range of population estimates recorded between 1990 and 1999 (298 to 1357 fish/km).

6.3 MOUNTAIN WHITEFISH

The population estimates for all size-classes of mountain whitefish within the 4-km study section in the Bow River derived using both the Darroch and Null methods were very similar (1143 and 1154 fish, respectively; Table 6.4). The 95% confidence intervals around the estimate were relatively wide due to the low recapture rate of 5.4% (Table 6.1). The current population estimates indicated that fish in the intermediate size-class (200-280 mm) were more abundant than fish larger than 280 mm.

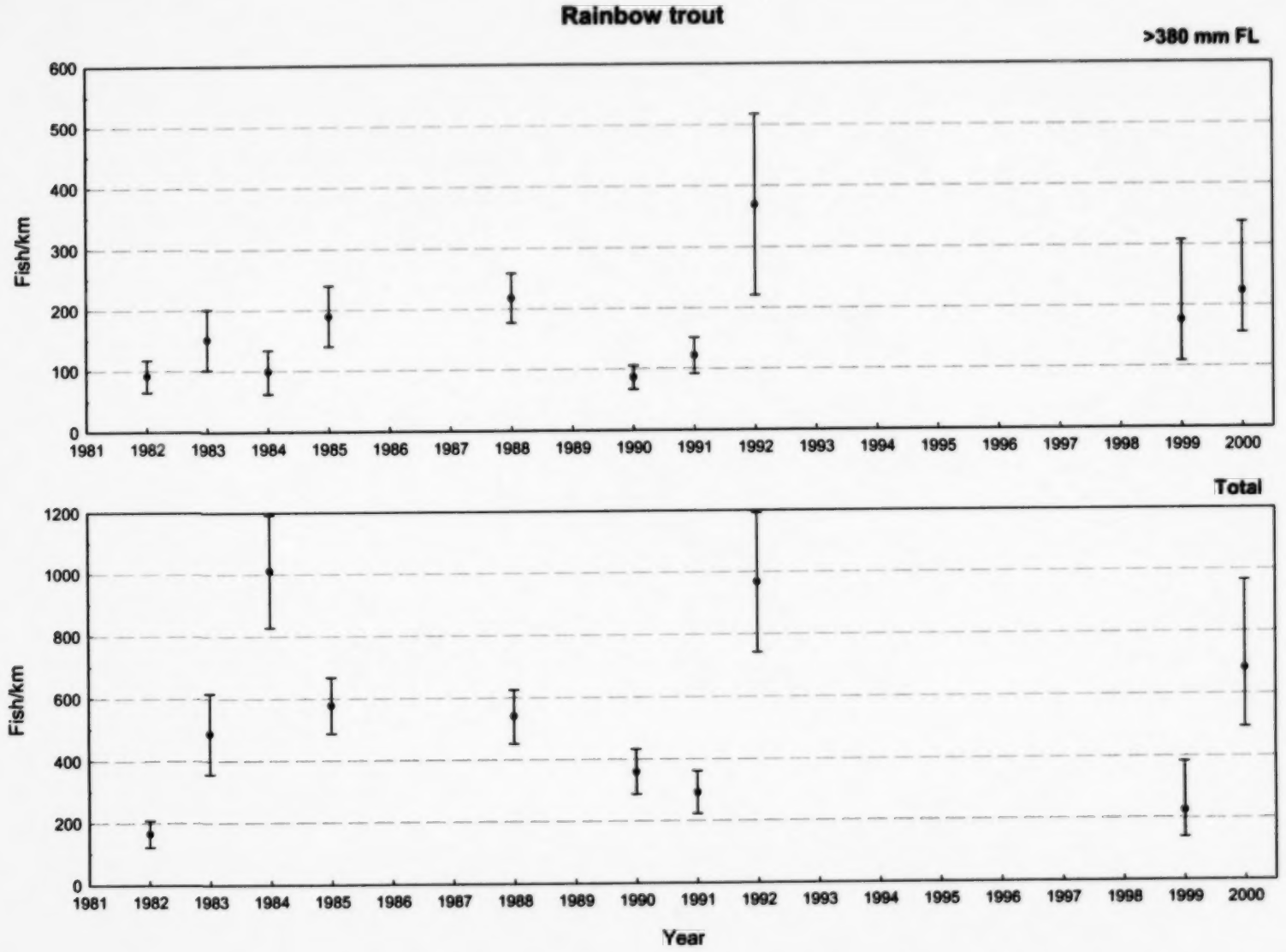

Figure 6.3 Comparison of rainbow trout population estimates (± 95% confidence intervals) calculated using the Darroch method, 1982 to 2000.

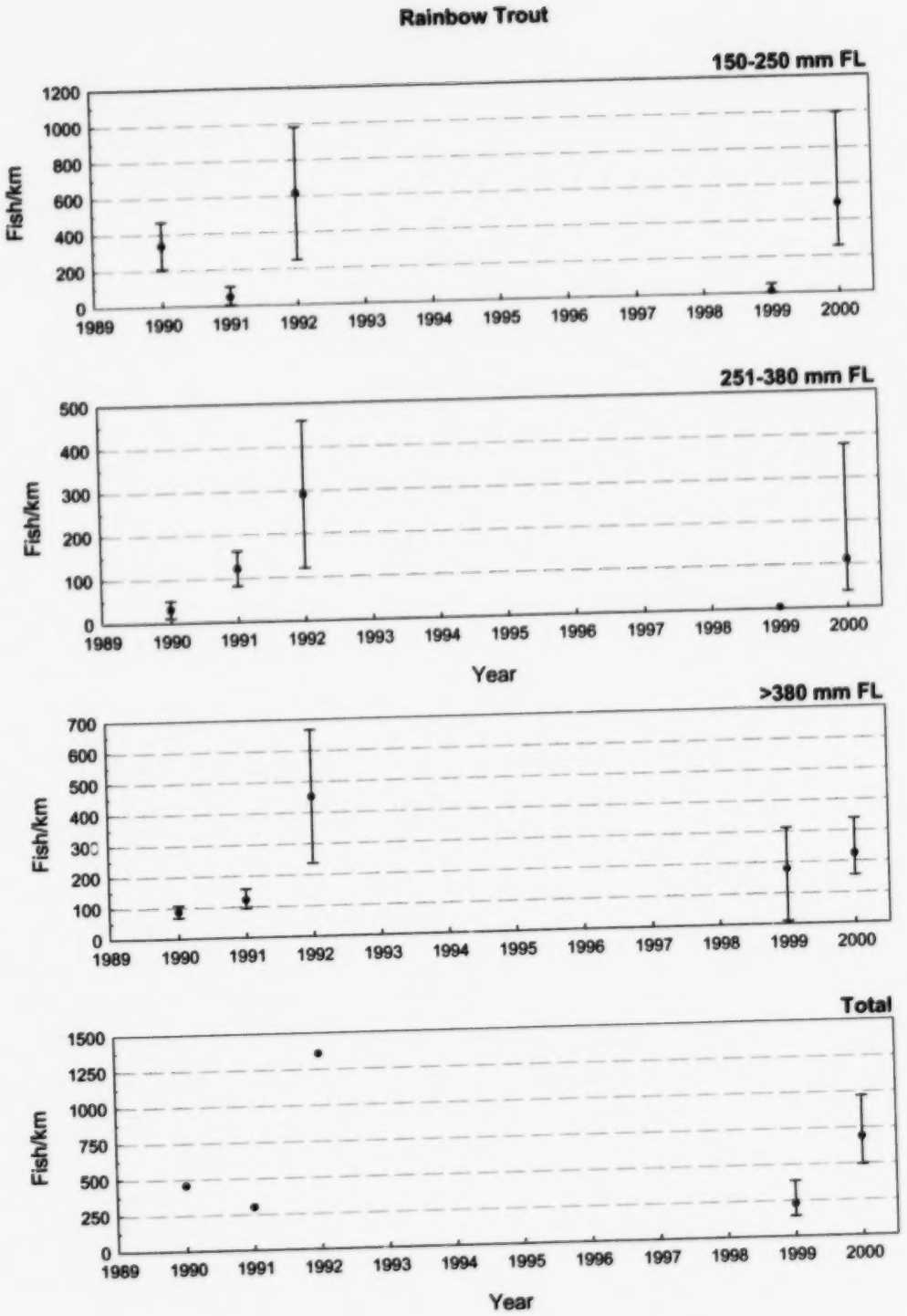

Figure 6.4 Comparison of rainbow trout population estimates (± 95% confidence intervals) calculated using the Null method, 1990 to 2000 (note changes in y-axis scales).

Table 6.4 Mountain whitefish population estimates for the Bow River, August 2000.

Method	Size-Class (mm FL)	Population Estimate	Standard Error	95% Conf. Int.		Capture Probability	Coefficient of Variation	Fish/km	Fish/ha
				Lower	Upper				
Darroch	150-199	660	441	224	2227	-	66.8	165	18.1
	200-280	2361	600	1476	3899	-	25.4	590	64.7
	>280	1729	352	1187	2595	-	20.4	432	47.4
	All	**4572**	**712**	**3404**	**6228**	-	**15.6**	**1143**	**125.2**
Null	150-199	682	463	228	2337	0.0104	67.9	171	18.7
	200-280	2404	614	1499	3978	0.0147	25.5	601	65.9
	>280	1755	359	1203	2639	0.0211	20.5	439	48.1
	All	**4617**	**720**	**3436**	**6293**	**0.0172**	**15.6**	**1154**	**126.5**

The 2000 mountain whitefish population estimates calculated using the Darroch estimator and the Null method are compared to those from 1999 (Appendix C, Tables C2 and C3). Mountain whitefish population estimates for the large size-class (>280 mm in fork length) were higher in 2000 than in 1999, but were lower for the intermediate size-class (200-280 mm in fork length). The small size-class (150-199 mm in fork length) was not evaluated in 1999. The increase in the large size-class abundance between 1999 and 2000 was likely due to the passage of a strong 1998 cohort. This cohort likely contributed to the high abundance of intermediate size-class identified in 1999 and the large size-class in 2000.

6.4 FISH MOVEMENTS

One of the assumptions of population estimates derived through the mark-recapture methodologies is closure. This is defined as absence of fish movements out of the study area during the study period (White et al. 1982). The closure assumption was violated during the present study because the upstream and downstream boundaries of the study area were open to fish movement (i.e., they could not be physically blocked due to the large size of the river). To determine the potential effects of this violation on population estimates, movement of individual fish out of the study area was assessed on the basis of distance travelled between each marking and recapture event for all recaptured fish (identified through tag numbers or fin clips that corresponded to capture locations).

The majority of brown trout (91.7%), rainbow trout (72.4%), and mountain whitefish (59.5%) were recaptured within the same section where they were originally marked and released (Figure 6.5). One of 12 recaptured brown trout (8.3%) moved 2 km upstream of its release location. Eight of 29 rainbow trout were recaptured one to three kilometres away from the release locations; the direction of these movements appeared random (five upstream and three downstream). In contrast mountain whitefish movements showed a downstream trend with 35% of recaptures occurring one to three kilometres downstream of the original capture locations. Of note was one mountain whitefish originally tagged in the Carseland Canal on 11 October 1999 (Orange Floy Tag No. 1081). This fish was recaptured in the canal during the Trout Unlimited fish rescue operations and released in the Bow River on 20 October 1999, and subsequently recaptured in the present study area on 22 August 2000.

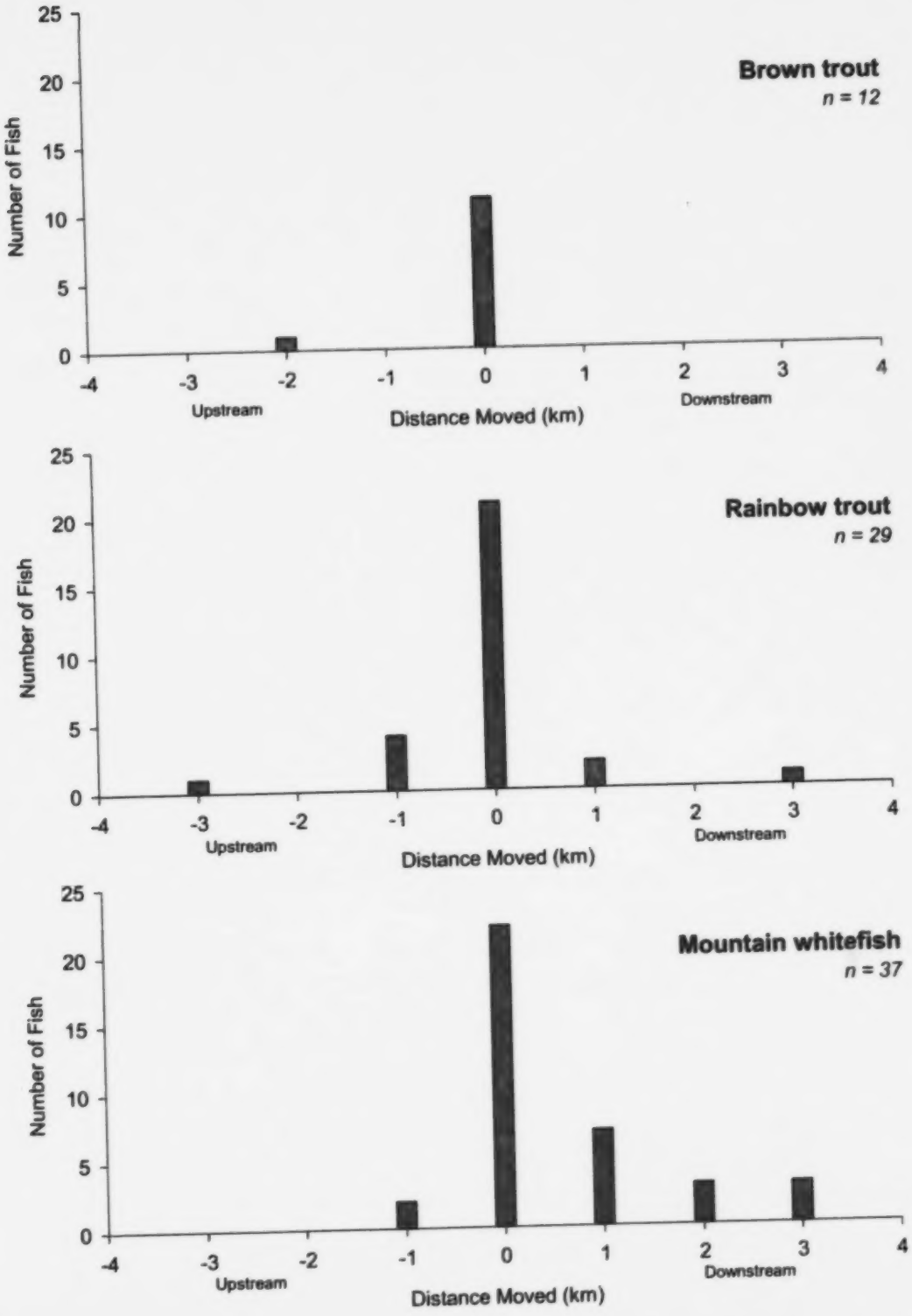

Figure 6.5 Distance moved by individual brown trout, rainbow trout, and mountain whitefish between release and recapture locations in the Bow River, August 2000.

The above movement results were obtained from fish that moved but remained within the study area (i.e., fish that moved out of the study area were not included in the calculations); therefore, they should be treated as indices of movement rather than direct estimates of movement. By assuming that the number of fish that leave the study area is proportional to the calculated movement indices of fish that remain within the study area, it was possible to estimate the number of fish that left the area during the study period (Table 6.5). In each study section, the number of fish that left the study area was based on the total number of fish marked in this section and the percent of fish that would have left as determined by the movement indices and the location of the section relative to the study area boundaries. For example, 8.3% of brown trout moved 2 km upstream from their release locations; therefore, this proportion was applied to the total number of fish marked in Sections 1 and 2 to calculate fish "escapes" through the upstream boundary (6 and 4 fish, respectively), but was not applied to fish marked in Section 3 because the upstream migrants could potentially be recaptured in Section 1 (still within the study area).

Table 6.5 Summary of fish movements out of the Bow River study area during fish population assessments, August 2000.

Section	Brown trout			Rainbow trout			Mountain whitefish		
	Total Marked	% Moved	Number Moved	Total Marked	% Moved	Number Moved	Total Marked	% Moved	Number Moved
1	75	8.3	6	92	17.2	16	136	5.4	7
2	53	8.3	4	70	6.9	5	101	8.1	8
3	57	0.0	0	107	6.9	7	232	16.2	38
4	79	0.0	0	137	10.3	14	130	35.1	46
Total	**264**		**11**	**406**		**42**	**599**		**99**
Mean % Moved	**4.0**			**10.4**			**16.5**		

Based on the above rationale, it was estimated that 4.0% of brown trout, 10.4% of rainbow trout, and 16.5% of mountain whitefish left the study area during the population assessment period. This out-migration would bias the population estimates upwards relative to the estimates that would have been obtained with total closure. However, because the previous studies reported similar indices of trout movement out of the study area during 1990-1999 (2 to 8% for brown trout, 6 to 13% for rainbow trout, 17% for mountain whitefish), the biases caused by out-migration were relatively constant. As such, they would have little effect on the overall trends in population estimates recorded during the past decade.

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APPENDIX A

Raw Data for Captured Fish

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Excessive	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
4	21	1	1	S	BLTR	290	303	300		2904					00000000						
1	23	2	1	N	BLTR	250	262	170		3312					00000000						
3	24	1	2	N	BLTR	261	275	200		2613					00000000	H	J	M			
2	24	2	1	S	BLTR	250	262	135	X	3312					00000000						
24	21	1	1	N	BNTR	212	224	120		2702					10000000						
73	21	1	1	S	BNTR	232	240	150		2905					10000100						
111	21	1	1	S	BNTR	247	254	180			N	N	A	1	10000000						
141	21	1	1	S	BNTR	258	266	255		2903					10000000						
240	21	1	1	S	BNTR	491	502	1445		2305					10000000						Originally tagged last year
262	21	1	1	S	BNTR	524	542	1895		2312					10000000						Originally tagged last year
125	21	1	2	N	BNTR	251	263	205		2705					10000000						
203	21	1	2	N	BNTR	418	431	1025		2703					10000000	H	J	L			
208	21	1	2	N	BNTR	429	442	1020		2706					10000000				Scale	3	
83	21	1	2	S	BNTR	236	246	140		2914					10000000						
224	21	1	2	S	BNTR	473	480	1460		2908					10000000						
228	21	1	2	S	BNTR	480	485	1365		2907					10000000						
255	21	1	2	S	BNTR	513	523	1560		2906					10000000						
181	21	1	3	N	BNTR	397	408	835		2707					10000000						
27	21	1	3	S	BNTR	212	221	125			N	N	A	3	10000000						
118	21	1	3	S	BNTR	249	255	185		2932					10000100						
151	21	1	3	S	BNTR	265	277	240		2931					10000000						
159	21	1	3	S	BNTR	342	351	530		2924					10000000						
42	21	1	4	N	BNTR	222	235	145		2720	N	N	A	4	10000000						
210	21	1	4	N	BNTR	430	451	940		2710					10000000	H	J	M			
254	21	1	4	N	BNTR	512	530	1470		2711					10000000	H	J	M	Scale	6	
278	21	1	4	N	BNTR	571	580	1935		2717					10000000						
44	21	1	4	S	BNTR	223	231	170		2948					10000000						
94	21	1	4	S	BNTR	240	247	175		2946					10000000						
156	21	1	4	S	BNTR	283	291	280		2947					10000000						
160	21	1	4	S	BNTR	368	380	590		2679					10000000						Originally tagged last year
188	21	1	4	S	BNTR	402	412	800		2944					10000000						
193	21	1	4	S	BNTR	405	421	815		2943					10000000						
207	21	1	4	S	BNTR	428	433	765		2942					10000000						
256	21	1	4	S	BNTR	514	525	1930		2945					10000000						
5	21	2	1	N	BNTR	178	181	65			N	N	A	1	01000000				Scale		
22	21	2	1	N	BNTR	209	214	120		2736					01100000						
41	21	2	1	N	BNTR	221	232	130		2729					01000000						
53	21	2	1	N	BNTR	227	235	135		2743					01000000	H	J	M			
62	21	2	1	N	BNTR	228	234	170		2741					01000000	H	J	L	Scale	2	
60	21	2	1	N	BNTR	228	237	145		2739					01100000						
65	21	2	1	N	BNTR	230	241	155		2722					01000000				Scale	2	
85	21	2	1	N	BNTR	237	243	165		2726					01000000						
102	21	2	1	N	BNTR	245	254	190		2734					01000000						
174	21	2	1	N	BNTR	390	402	660		2732					01000000	H	E	H			
182	21	2	1	N	BNTR	397	405	725		2730					01000000	H	J	L			
216	21	2	1	N	BNTR	459	462	1240		2728					01000000	H	J	L			
15	21	2	1	S	BNTR	204	211	115			N	N	A	1	01000000				Scale		
45	21	2	1	S	BNTR	223	230	135		2973					01000000				Scale	1	
95	21	2	1	S	BNTR	240	249	210		2961					01000000				Scale	2	Caudal Clip
103	21	2	1	S	BNTR	245	254	170		2962					01000000				Scale		
104	21	2	1	S	BNTR	245	256	180		2967					01000000				Scale	2	

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Site	Section	Bank *	Species *	Fork Length (mm)	Total Length (mm)	Weight (g)	Scoop	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Side	Sect.	Side	Sect.		Cause *	Loc *	Sev *			
175	21	2	1	S	BNTR	390	394	700		2952					01000000						
191	21	2	1	S	BNTR	404	419	890		2966					01000000				Scale	3	
197	21	2	1	S	BNTR	410	422	885		2953					01000000						
229	21	2	1	S	BNTR	480	490	1430		2963					01000000				Scale	5	
248	21	2	1	S	BNTR	505	516	1520		2964					01000000				Scale	6	
265	21	2	1	S	BNTR	530		2040							00000000						
34	21	2	2	N	BNTR	217	225	130		2757					01000000						
54	21	2	2	N	BNTR	227	234	140		2759					01000000						
66	21	2	2	N	BNTR	230	237	185		2756					01000000						
81	21	2	2	N	BNTR	235	245	185		2758					01000000	H	J	L			
131	21	2	2	N	BNTR	254	262	215		2755					01000000						
134	21	2	2	N	BNTR	255	264	210		2754					01000000						
274	21	2	2	N	BNTR	542	556	2005		2744					01000000						
8	21	2	2	S	BNTR	190	201	75			N	N	A	2	01000000				Scale	2	
70	21	2	2	S	BNTR	230	235	170		2988					01000000				Scale		
236	21	2	2	S	BNTR	485	502	1355		2091					01000000						Originally Tagged Last Year
245	21	2	2	S	BNTR	494	500	1705		2587					01000000						Originally tagged last year
21	21	2	3	N	BNTR	208	216	125		2771					01000000						
46	21	2	3	N	BNTR	224	230	130		2772					01000000	H	J	L			
117	21	2	3	N	BNTR	249	260	205		2773					01000000	H	J	M			
146	21	2	3	N	BNTR	260	271	220		2761					01000000	H	J	M			
187	21	2	3	N	BNTR	401	412	870		2763					01000000	H	J	M			
200	21	2	3	N	BNTR	412	418	915		2762					01000000	H	J	L			
39	21	2	3	S	BNTR	220	233	145			N	N	A	3	01000000						
89	21	2	3	S	BNTR	238	244	165		3044					01000000						
96	21	2	3	S	BNTR	240	248	205		3043					01000000						
101	21	2	3	S	BNTR	244	250	210		3039					01000000				Scale	2	
142	21	2	3	S	BNTR	258	266	245		3041					01000000				Scale		
157	21	2	3	S	BNTR	284	295	285		3036					01000000				Scale	2	
242	21	2	3	S	BNTR	492	510	1535		2993					01000000				Scale	5	
273	21	2	3	S	BNTR	540	544	2030		2995					01000001				Scale	6	Caudal Clip
279	21	2	3	S	BNTR	586	593	2220		3027					01000000				Scale	6	
55	21	2	4	N	BNTR	227	236	155		2778					01000000						
150	21	2	4	N	BNTR	265	277	255		2780					01000000				Scale		
78	21	2	4	S	BNTR	234	244	175		3065					01000000						
99	21	2	4	S	BNTR	242	250	170		3082					01000000						
122	21	2	4	S	BNTR	250	256	190		3068					01000000						
143	21	2	4	S	BNTR	259	265	210		3075					01000000						
149	21	2	4	S	BNTR	264	274	225		3069					01000000						
152	21	2	4	S	BNTR	265	270	235		3072					01000000						
204	21	2	4	S	BNTR	420	427	925		3050					01000000						
239	21	2	4	S	BNTR	490	500	1435		3045					01000000	H	J	L			Left Mandible Gone
20	22	1	1	N	BNTR	208	219	120	X	2736					00000000						
61	22	1	1	N	BNTR	228	240	145	X	2739					00000000						
35	22	1	1	N	BNTR	218	239	135		2789					00100000				Scale		
36	22	1	1	N	BNTR	218	230	120		2800					00100000				Scale	2	
56	22	1	1	N	BNTR	227	240	155		2797					00100000				Scale	2	
67	22	1	1	N	BNTR	230	241	145		2795					00100000				Scale		
121	22	1	1	N	BNTR	250	261	220		2788					00100000						
140	22	1	1	N	BNTR	258	266	210		2791					00100000				Scale	2	
219	22	1	1	N	BNTR	468	471	1170		2250					00100000						
281	22	1	1	N	BNTR	624	631	2435		2786					00100000						
12	22	1	1	S	BNTR	203	213	90			N	N	B	1	00100000				Scale		

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Data	Sect.	Data	Sect.		Cause [c]	Loc [d]	Sev [e]			
230	22	1	1	S	BNTR	480	489	1305		3096					00100000				Scale	4	
6	22	1	2	N	BNTR	180	186	70			N	N	B	2	00100000				Scale	1	LNDC in mouth
97	22	1	2	S	BNTR	240	246	170		3351					00100000				Scale		
136	22	1	2	S	BNTR	257	267	205		3100					00100000				Scale	2	
266	22	1	3	N	BNTR	531	534	2080		2823					00100000						
165	22	1	3	S	BNTR	380	381	740		3358					00100000				Scale	3	
176	22	1	3	S	BNTR	390	403	835		3359					00100000						
195	22	1	3	S	BNTR	405	415	775		3360					00100000						
234	22	1	3	S	BNTR	481	497	1305		3356					00100000				Scale	5	
238	22	1	3	S	BNTR	487	496	1560		3355					00100000				Scale	5	
259	22	1	3	S	BNTR	520	523	1895		3357					00100000	H	J	L	Scale	6	
269	22	1	3	S	BNTR	534	546	1810		3354					00100000				Scale	7	
271	22	1	3	S	BNTR	535	556	1705		3353					00100000				Scale		
68	22	1	4	N	BNTR	230	239	145		2836					00100000				Scale	1	
69	22	1	4	N	BNTR	230	238	165		2840					00100000				Scale		
179	22	1	4	N	BNTR	393	404	775		2828					00100000				Scale	4	
58	22	1	4	S	BNTR	227	235	160		3392					00100000						
91	22	1	4	S	BNTR	239	246	200		3388					00100000						
137	22	1	4	S	BNTR	257	267	210		3389					00100000						
158	22	1	4	S	BNTR	288	297	305		3390					00100000						
212	22	1	4	S	BNTR	437	445	1155		3386					00100000						
250	22	1	4	S	BNTR	508	525	1590		3387					00100000						
9	22	2	1	N	BNTR	191	197	100			N	N	B	1	00010000						
11	22	2	1	N	BNTR	202	209	105		2858					00010000						
25	22	2	1	N	BNTR	212	220	115		2843					00010000				Scale	1	
76	22	2	1	N	BNTR	233	240	165		2857					00010000						
183	22	2	1	N	BNTR	397	404	850		2853					00010000						
215	22	2	1	N	BNTR	450	457	1070		2847					00010100						
63	22	2	1	S	BNTR	228	235	140		3409					00010000						Tag# 3410-Lost
127	22	2	1	S	BNTR	251	258	185		3405					00010000						
163	22	2	1	S	BNTR	379	385	715		3399					00010000						
170	22	2	1	S	BNTR	384	395	715		3404					00010000						
178	22	2	1	S	BNTR	392	410	695		3406					00010000						
252	22	2	1	S	BNTR	510	532	1720		3402					00010000						
86	22	2	2	N	BNTR	237	244	175		2876					00010000	H	J	L	Scale	2	
132	22	2	2	N	BNTR	254	260	225		2874					00010000				Scale	2	
147	22	2	2	N	BNTR	261	269	250		2877					00010000				Scale	2	
218	22	2	2	N	BNTR	463	470	1335		2870					00010000	H	J	M			
227	22	2	2	N	BNTR	478	481	1370		2867					00010000	P	B	H			
14	22	2	2	S	BNTR	204	210	85		3429					00010000						
17	22	2	2	S	BNTR	205	215	100			N	N	B	2	00010000						
18	22	2	2	S	BNTR	205	210	115			N	N	B	2	00010000						
26	22	2	2	S	BNTR	212	222	115		3428					00010000						
92	22	2	2	S	BNTR	239	249	215		3430					00010000						
155	22	2	2	S	BNTR	282	290	325		3426					00010000						
190	22	2	2	S	BNTR	403	420	820		3427					00010000						
192	22	2	2	S	BNTR	404	416	775		3423					00010000						
225	22	2	2	S	BNTR	475	494	1350		3424					00010000	H	J	L			
231	22	2	2	S	BNTR	480	495	1470		3425					00010000						
280	22	2	2	S	BNTR	600	603	2520		3421					00010000						
19	22	2	3	N	BNTR	207	212	125		3104					00010000				Scale	1	
30	22	2	3	N	BNTR	215	224	130		2891					00010000				Scale	2	
57	22	2	3	N	BNTR	227	234	130		2886					00010000				Scale		

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Pass	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture: Date	Clip @ Capture: Sect.	Clip @ Release: Date	Clip @ Release: Sect.	Electrofisher	Injuries: Cause [c]	Injuries: Loc [d]	Injuries: Sev [e]	Ageing Structure	Age (yrs)	Comments
38	22	2	3	S	BNTR	220	230	135		3441					00010000						
205	22	2	3	S	BNTR	420	430	985		3440					00010000						
246	22	2	3	S	BNTR	495	500	1440		3438					00010000						
31	22	2	4	N	BNTR	215	224	115		3118					00010000						
37	22	2	4	N	BNTR	218	226	125		3115					00010000						
49	22	2	4	N	BNTR	225	230	125		3108					00010000						
71	22	2	4	N	BNTR	230	239	155		3119					00010000				Scale		
105	22	2	4	N	BNTR	245	252	170		3117					00010000				Scale		
43	22	2	4	S	BNTR	222	230	155		3478					00010000						
64	22	2	4	S	BNTR	228	235	155		3477					00010000						
72	22	2	4	S	BNTR	230	240	175		3476					00010000						
124	22	2	4	S	BNTR	250	260	200		3480					00010000						
144	22	2	4	S	BNTR	259	271	230		3479					00010000						
186	22	2	4	S	BNTR	400	410	810		3481					00010000						
198	22	2	4	S	BNTR	412	420	910		2556					00010001						Originally tagged last year
232	22	2	4	S	BNTR	480	482	1315		3482					00010000	H	E	L			
235	22	2	4	S	BNTR	482	495	1315		3483					00010000						
10	23	1	1	N	BNTR	200	206	95		3122					00001000				Scale	2	
13	23	1	1	N	BNTR	204	215	115		3130					00001000				Scale	1	
32	23	1	1	N	BNTR	215	227	110		3129					00001000				Scale	2	
74	23	1	1	N	BNTR	232	245	165		3126					00001000				Scale	2	
79	23	1	1	N	BNTR	234	246	180		3125					00001000				Scale	2	
106	23	1	1	N	BNTR	245	258	210		3128					00001000				Scale		
33	23	1	1	S	BNTR	216	233	130		3496					00001000				Scale	2	
87	23	1	1	S	BNTR	237	248	165		3497					00001000				Scale		
171	23	1	1	S	BNTR	384	395	665		3486					00001000				Scale	3	
233	23	1	1	S	BNTR	480	490	1225		3488					00001000				Scale	4	
257	23	1	1	S	BNTR	516	524	1470		3491					00001000				Scale	7	
277	23	1	1	S	BNTR	570	580	2115		3490					00001000				Scale	8	
247	23	1	2	N	BNTR	500	510	1670		3146					00001000	H	J	M	Scale	4	
100	23	1	2	S	BNTR	243	252	180		3204					00001000				Scale		
109	23	1	2	S	BNTR	246	254	175		3205					00001000				Scale	2	
211	23	1	2	S	BNTR	435	447	915		3203					00001000				Scale	3	
237	23	1	2	S	BNTR	485		1295		3207					00001000				Scale	5	
261	23	1	2	S	BNTR	523	531	1615		3201					00001000				Scale	6	
114	23	1	3	N	BNTR	248	258	180		3161					00001000				Scale	2	
47	23	1	3	S	BNTR	224	235	135			N	N	C	3	00001000	G	G	L			
110	23	1	3	S	BNTR	246	255	190		3232					00001000						
253	23	1	4	N	BNTR	511	521	1630		3192					00001000				Scale	6	
80	23	1	4	S	BNTR	234	240	185			N	N	C	4	00001000						
135	23	1	4	S	BNTR	256	265	150		3246					00001000				Scale		
153	23	1	4	S	BNTR	265	275	265		3233					00001000				Scale	2	
154	23	1	4	S	BNTR	271	281	200		3245					00001000				Scale	3	
177	23	1	4	S	BNTR	392	397	720		3240					00001000				Scale	3	
213	23	1	4	S	BNTR	440	452	1245		3239					00001000				Scale	4	
243	23	1	4	S	BNTR	492	504	1370		3234					00001100				Scale	5	
272	23	1	4	S	BNTR	539	553	1845		3235					00001000				Scale	6	
226	23	2	1	N	BNTR	476	489	1210		3309					00000100	H	J	L	Scale	4	Left maxillae.
214	23	2	1	S	BNTR	449	470	1055	X	2847					00000000	H	E	H			Blind
77	23	2	1	S	BNTR	234	242	170	X	2905					00000000						
172	23	2	1	S	BNTR	385	395	700		3263					00000100				Scale	4	
189	23	2	1	S	BNTR	402	441	900		3251					00000100	P	B	L	Scale	3	Caudal Clip
209	23	2	1	S	BNTR	429	446	1015		3252					00000100				Scale	4	

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank *	Species *	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Comm *	Loc *	Sev *			
221	23	2	1	S	BNTR	470	484	1340		3253					00000100	H	J	L	Scale	5	
29	23	2	2	S	BNTR	213	222	125			N	N	C	2	00000100						
123	23	2	2	S	BNTR	250	259	205		3268					00000100						
249	23	2	2	S	BNTR	507	514	1560		3273					00000100				Scale	6	Tag Loss # 3271,3272
251	23	2	2	S	BNTR	510	515	1630		3269					00000100				Scale	6	
206	23	2	3	N	BNTR	427	435	1080		3336					00000100	H	J	L	Scale	3	Nose Tip,
119	23	2	3	S	BNTR	249	256		X	2932					00000000						
50	23	2	3	S	BNTR	225	232	145			N	N	C	3	00000100						
84	23	2	3	S	BNTR	236	245	190			N	N	C	3	00000100						
148	23	2	3	S	BNTR	262	271	240		3282					00000100						
162	23	2	3	S	BNTR	371	386	635		3280					00000100	H	J	L			Left Mandible Gone
169	23	2	3	S	BNTR	384	400	745		3279					00000110	H	J	L			
194	23	2	3	S	BNTR	405	410	785		3277					00000100	H	J	L			
222	23	2	3	S	BNTR	471	474	1510		3276					00000101				Scale	4	
241	23	2	4	S	BNTR	491	508	1340	X	3234					00000000						Recap within day
126	23	2	4	S	BNTR	251	259	245		3297					00000100						
185	23	2	4	S	BNTR	400	410	830		3295					00000100						
267	23	2	4	S	BNTR	532	544	1795		3292					00000101						
282	23	2	4	S	BNTR			1805							00000000						Escaped - excluded from estimate
59	24	1	1	N	BNTR	228	238	145		2606					00000010				Scale		
217	24	1	1	N	BNTR	461	478	1315		2604					00000010				Scale	4	
7	24	1	1	S	BNTR	182	191	70			N	N	D	1	00000010	H	J	L			Left Eye Gone
196	24	1	1	S	BNTR	410	413	825		2406					00000010				Scale	4	
16	24	1	2	S	BNTR	204	212	100			N	N	D	2	00000010						
184	24	1	3	N	BNTR	399	412	845		2621					00000010	H	J	M	Scale	3	Right Maxillae,
201	24	1	3	N	BNTR	414	429	900		2651					00000010				Scale	3	
167	24	1	3	S	BNTR	381	395	715	X	3279					00000000						
107	24	1	3	S	BNTR	245	254	195			N	N	D	3	00000010						
244	24	1	3	S	BNTR	493	505	1505		2420					00000010				Scale	5	
258	24	1	3	S	BNTR	520	528	1685		2422					00000010				Scale	5	
28	24	1	4	S	BNTR	212	222	125			N	N	D	4	00000010						
40	24	1	4	S	BNTR	220	231	165			N	N	D	4	00000010						
48	24	1	4	S	BNTR	224	231	140			N	N	D	4	00000010						
52	24	1	4	S	BNTR	226	235	160			N	N	D	4	00000010						
88	24	1	4	S	BNTR	237	247	170			N	N	D	4	00000010						
90	24	1	4	S	BNTR	238	249	150			N	N	D	4	00000010						
113	24	1	4	S	BNTR	248	257	180		2533					00000010						
130	24	1	4	S	BNTR	253	259	195		2534					00000010						
133	24	1	4	S	BNTR	255	261	205		2532					00000010						
139	24	1	4	S	BNTR	258	270	215		2535					00000011						
180	24	1	4	S	BNTR	397	412	795		2531					00000010				Scale	4	
116	24	2	1	N	BNTR	249	261	175		2667					00000001				Scale	2	
51	24	2	1	S	BNTR	226	233	175		2503					00000001				Scale	2	
202	24	2	1	S	BNTR	415	430	915		2501					00000001				Scale	3	
263	24	2	1	S	BNTR	525	535	1900		2502					00000001				Scale	7	
268	24	2	2	S	BNTR	532	545	1745	X	3292					00000000						MALE
108	24	2	2	S	BNTR	245	253	195			N	N	D	2	00000001	H	J	L			Blind Eye
128	24	2	2	S	BNTR	251	260	205			N	N	D	2	00000001						
129	24	2	2	S	BNTR	252	265	210		2514					00000001				Scale	2	
166	24	2	2	S	BNTR	381	385	655		2510					00000001				Scale		
168	24	2	2	S	BNTR	382	391	660		2509					00000001				Scale	3	
220	24	2	3	N	BNTR	468	482	1190		2631					00000001	H	E ®	H	Scale	4	Right Maxillae,
276	24	2	3	S	BNTR	550	553	1985	X	2995					00000000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
223	24	2	3	S	BNTR	472	480	1525	X	3276					00000000						
75	24	2	3	S	BNTR	232	241	175			N	N	D	3	00000001						
120	24	2	3	S	BNTR	250	260	245		2434					00000001						
164	24	2	3	S	BNTR	380	391	750		2432					00000001				Scale	3	
173	24	2	3	S	BNTR	390	403	755		2431					00000001				Scale	5	
270	24	2	3	S	BNTR	535	545	1735		2430					00000001						
23	24	2	4	N	BNTR	212	223	110		2639					00000001				Scale	2	
98	24	2	4	N	BNTR	241	251	175		2638					00000001				Scale		
145	24	2	4	S	BNTR	260	270	225	X	2535					00000000						Recap within day
199	24	2	4	S	BNTR	412	418	905	X	2556					00000000						
82	24	2	4	S	BNTR	235	242	175							00000001						
93	24	2	4	S	BNTR	239	247	185							00000001						
112	24	2	4	S	BNTR	247	255	205							00000001						
115	24	2	4	S	BNTR	248	255	205							00000001						
138	24	2	4	S	BNTR	257	266	210							00000001						
161	24	2	4	S	BNTR	370	387	680							00000001						
260	24	2	4	S	BNTR	520	530	1800							00000001						
264	24	2	4	S	BNTR	525	529	1625							00000001						
275	24	2	4	S	BNTR	546	553	1930							00000001						
286	23	2	1	S	BURB	640		1630							00000000						
284	23	2	4	S	BURB	530		1000							00000000						
285	24	2	4	N	BURB	533	533	875		2640					00000000						
283	24	2	4	S	BURB	455		530							00000000						
287	23	2	1	S	LNSC	514		1960							00000000						
519	21	1	1	N	MNWH	228	245	165			N	N	A	1	10000000						
683	21	1	1	N	MNWH	305	330	500			N	N	A	1	10000000						
290	21	1	1	S	MNWH	160	174	50			N	N	A	1	10000000						
338	21	1	1	S	MNWH	195	211	85			N	N	A	1	10000000						
727	21	1	2	N	MNWH	319	345	540			N	N	A	2	10010000				Scale	2	Tag #3106
304	21	1	2	S	MNWH	178	194	80			N	N	A	2	10000000						
830	21	1	2	S	MNWH	395	421	1200		2913					10000000						
288	21	1	3	N	MNWH	155	169	40			N	N	A	3	10000000						
298	21	1	3	N	MNWH	175	193	70			N	N	A	3	10000000						
313	21	1	3	N	MNWH	183	200	75			N	N	A	3	10000000						
363	21	1	3	N	MNWH	201	218	110			N	N	A	3	10000000						
400	21	1	3	N	MNWH	209	225	125			N	N	A	3	10000000						
431	21	1	3	N	MNWH	213	230	135			N	N	A	3	10000000						
436	21	1	3	N	MNWH	214	232	145			N	N	A	3	10000000						
551	21	1	3	N	MNWH	234	252	190			N	N	A	3	10000000						
569	21	1	3	N	MNWH	239	255	220			N	N	A	3	10000000						
573	21	1	3	N	MNWH	240	258	200			N	N	A	3	10000000						
594	21	1	3	N	MNWH	264	283	250			N	N	A	3	10000000						
291	21	1	3	S	MNWH	163	179	45			N	N	A	3	10000000						
302	21	1	3	S	MNWH	177	191	80			N	N	A	3	10000000						
305	21	1	3	S	MNWH	178	190	70			N	N	A	3	10000100						Snum 303=305
332	21	1	3	S	MNWH	194	203	105			N	N	A	3	11000000						Snum 332=331
379	21	1	3	S	MNWH	204	222	135			N	N	A	3	10000000						
438	21	1	3	S	MNWH	214	232	145			N	N	A	3	10000000						
476	21	1	3	S	MNWH	221	240	140		2925					10000001						
643	21	1	3	S	MNWH	290	312	400		2921					10000000						
664	21	1	3	S	MNWH	300	321	425		2917					10000000						Tag Lost
732	21	1	3	S	MNWH	320	343	515		2919					10000000						
740	21	1	3	S	MNWH	322	344	610		2923					10000000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Side	Sect.	Side	Sect.		Class [c]	Loc [d]	Sev [e]			
861	21	1	3	S	MNWH	407	437	1500		2922					10000000						
896	21	1	3	S	MNWH	422	442	1345		2916					10000000						
314	21	1	4	N	MNWH	184	199	65			N	N	A	4	10000000						
915	21	1	4	N	MNWH	430	455	1145		2716					11000000						
329	21	1	4	S	MNWH	190	205	100			N	N	A	4	10000000						
477	21	1	4	S	MNWH	221	237	160		2941					10000000						
342	21	2	1	N	MNWH	198	213	110			N	N	A	1	01000000						
382	21	2	1	N	MNWH	205	217	110			N	N	A	1	01000000						
440	21	2	1	N	MNWH	215	228	130		2740					01000000						
462	21	2	1	N	MNWH	220	235	160		2735					01100000						
550	21	2	1	N	MNWH	234	246	175		2733					01000000						
671	21	2	1	N	MNWH	301	317	470		2723					01000000	P	B	H			Hole in side
817	21	2	1	N	MNWH	390	436	1185		2731					01000000						
299	21	2	1	S	MNWH	175	187				N	N	A	1	01000000						
308	21	2	1	S	MNWH	180	195	70			N	N	A	1	01000000				Scale	1	
339	21	2	1	S	MNWH	195	210	90			N	N	A	1	01000000				Scale	1	
365	21	2	1	S	MNWH	202	222	120		2958					01000000						
458	21	2	1	S	MNWH	219	235	140		2972					01000000						
481	21	2	1	S	MNWH	222	242	160		2959					01000000						
656	21	2	1	S	MNWH	296	321	390		2954					01010000						
795	21	2	1	S	MNWH	372	400	1120		2960					01000000				Scale		
872	21	2	1	S	MNWH	412	451	1270		2956					01000000						
902	21	2	1	S	MNWH	426	460	1475		2955					01000000						
335	21	2	2	N	MNWH	195	207	95					A	2	01000000						
657	21	2	2	N	MNWH	297	316	450		2749					01000000						
675	21	2	2	N	MNWH	303	324	485		2752					01000000						
688	21	2	2	N	MNWH	309	321	490		2747					01000000						
762	21	2	2	N	MNWH	345	365	680		2750					01000000	H	J	M			
776	21	2	2	N	MNWH	360	381	775		2748					01000000						
834	21	2	2	N	MNWH	397	420	1115		2746					01000000						
836	21	2	2	N	MNWH	398	419	1220		2745					01000000						
417	21	2	2	S	MNWH	211	231	145		2987					01000000				Scale	1	
495	21	2	2	S	MNWH	224	240	160		2978					01000000				Scale		
531	21	2	2	S	MNWH	230	245	185		2986					01000000				Scale	1	
564	21	2	2	S	MNWH	237	254	220		2991					01000000						
617	21	2	2	S	MNWH	275	296	310		2989					01000000				Scale	2	
639	21	2	2	S	MNWH	289	315	415		2982					01000000				Scale	2	
665	21	2	2	S	MNWH	300	324	500		2985					00000000				Scale	3	Mortality
717	21	2	2	S	MNWH	315	337	550		2974					01000000				Scale	2	
718	21	2	2	S	MNWH	315	339	520		2980					01000000				Scale		
770	21	2	2	S	MNWH	354	384	785		2984					01000000				Scale	3	
789	21	2	2	S	MNWH	370	398	850		2983					01000000				Scale	4	
292	21	2	3	N	MNWH	165	175	40					A	3	01000000						
297	21	2	3	N	MNWH	174	183	50					A	3	01000000						
301	21	2	3	N	MNWH	177	184	70					A	3	01000000						
319	21	2	3	N	MNWH	187	207	80					A	3	01000000						
343	21	2	3	N	MNWH	198	210	90					A	3	01000000						
463	21	2	3	N	MNWH	220	235	145		2769					01000000						
491	21	2	3	N	MNWH	223	235						A	3	01000001						Snum 491=493
583	21	2	3	N	MNWH	250	263	215		2768					01000000						
642	21	2	3	N	MNWH	290	310	370		2767					01000000						
370	21	2	3	S	MNWH	202	215	90			N	N	A	3	01100000						Snum 344=370
469	21	2	3	S	MNWH	220	235	175			N	N	A	3	01000000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Barcode	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
506	21	2	3	S	MNWH	225	240	165			N	N	A	3	01000000						
576	21	2	3	S	MNWH	241	257	240		3038					01000000						
644	21	2	3	S	MNWH	290	305	345		3037					01000000						
694	21	2	3	S	MNWH	310	330	540		3035					01000000						
719	21	2	3	S	MNWH	315	339	495		2999					01000000						
761	21	2	3	S	MNWH	344	369	735		3031					01000000						
771	21	2	3	S	MNWH	354	377	725		3033					01000000						
777	21	2	3	S	MNWH	360	385	820		2994					01000000				Scale	3	
814	21	2	3	S	MNWH	388	410	1185		3000					01000000						
885	21	2	3	S	MNWH	416	446	1405		2997					01000000						
921	21	2	3	S	MNWH	432	456	1395		2998					01000000						
932	21	2	3	S	MNWH	441	470	1635		3026					00000000						Mortality
941	21	2	3	S	MNWH	465	494	1945		2996					01000000						
916	21	2	4	N	MNWH	430	445		X	2716					00000000						
331	21	2	4	N	MNWH	193	206	75	X		A	3	A	3,4	00000000						Snum 332=331
296	21	2	4	N	MNWH	170	182	60					A	4	01000000						
336	21	2	4	N	MNWH	195	210	75					A	4	01000000						
366	21	2	4	S	MNWH	202	218	115		3078					01000000						
375	21	2	4	S	MNWH	204	220	110		3077					01000000						
376	21	2	4	S	MNWH	204	220	100		3079					01000000						
435	21	2	4	S	MNWH	214	225	120		3076					01000000						
456	21	2	4	S	MNWH	218	233	145		3067					01000000						
500	21	2	4	S	MNWH	225	244	140		3071					01000000						
501	21	2	4	S	MNWH	225	242	145		3073					01100000				Scale		
527	21	2	4	S	MNWH	229	240	180		3049					01000000						
532	21	2	4	S	MNWH	230	248	180		3074					01000000						
596	21	2	4	S	MNWH	265	276	150		3064					01000000						
608	21	2	4	S	MNWH	270	291	310		3062					01010000						
710	21	2	4	S	MNWH	314	333	605		3061					01000000						
744	21	2	4	S	MNWH	323	346	425		3063					01000000						
755	21	2	4	S	MNWH	339	361	655		3066					01000000						
831	21	2	4	S	MNWH	395	420	1110		3047					01000000						
930	21	2	4	S	MNWH	440	460	1585		3048					01000000						
457	22	1	1	N	MNWH	219	238	150	X	2735					00000000						
487	22	1	1	N	MNWH	223	238	130		2793					00100000				Scale		
513	22	1	1	N	MNWH	227	241	160		2794					00100000				Scale		
570	22	1	1	N	MNWH	240	257	205		2799					00100100				Scale		
593	22	1	1	N	MNWH	263	285	290		2790					00100000						
708	22	1	1	N	MNWH	313	336	515		2783					00100000						
716	22	1	1	N	MNWH	315	334	510		2782					00100000						
878	22	1	1	N	MNWH	415	441	1440		2787					00110000				Scale	6	
346	22	1	1	S	MNWH	199	214	110			N	N	B	1	00100000				Scale	1	
420	22	1	1	S	MNWH	211	225	130			N	N	B	1	00100000				Scale		
478	22	1	1	S	MNWH	221	241	145		3097					00100000				Scale		
659	22	1	1	S	MNWH	297	320	450		3092					00100000				Scale	3	
676	22	1	1	S	MNWH	303	322	460		3091	N	N	B	1	00100000				Scale	2	Tag # 3091 Lost
746	22	1	1	S	MNWH	326	350	600		3090					00100000				Scale	4	Tag # 3089 Lost
870	22	1	1	S	MNWH	411	444	1405		3087					00100000				Scale	7	
906	22	1	1	S	MNWH	427	465	1605		3086					00100000				Scale	6	
925	22	1	1	S	MNWH	435	471	1410		3088					00100000				Scale	6	
426	22	1	2	N	MNWH	213	222	100		2815					00110000						
615	22	1	2	N	MNWH	275	286	320		2810					00100000				Scale	3	
616	22	1	2	N	MNWH	275	292	300		2813					00100000				Scale		

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank *	Species *	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Ram	Bank	Date	Sect.		Cause *	Loc *	Sev *			
655	22	1	2	N	MNWH	296	307	430		2812					00101000				Scale	2	
680	22	1	2	N	MNWH	305	328	475		2807					00100000				Scale	2	
756	22	1	2	N	MNWH	340	368	700		2808					00100000				Scale	4	
799	22	1	2	N	MNWH	373	398	880		2804					00100000				Scale	3	
818	22	1	2	N	MNWH	390	428	1295		2803					00100010				Scale	6	
829	22	1	2	N	MNWH	395	422	1200		2801					00100000	H	J	L	Scale		
838	22	1	2	N	MNWH	399	435	1220		2802					00100000						
864	22	1	2	N	MNWH	410	439	1235		2805					00100000	H	J	M	Scale	13	
341	22	1	2	S	MNWH	197	215	105			N	N	B	2	00100000						
645	22	1	2	S	MNWH	290	300	350		3099					00100000				Scale	4	
647	22	1	2	S	MNWH	292	312	380		1081					00100000						Originally Tagged at Carseland Canal Headgates
320	22	1	3	N	MNWH	188	201	85					B	3	00100000				Scale	1	
367	22	1	3	N	MNWH	202	212	100					B	3	00100000				Scale		
395	22	1	3	N	MNWH	208	216	110					B	3	00100000						
396	22	1	3	N	MNWH	208	222	120					B	3	00100000				Scale	1	
405	22	1	3	N	MNWH	210	222	105		2822					00100000				Scale	1	
418	22	1	3	N	MNWH	211	225	140					B	3	00100000				Scale		
464	22	1	3	N	MNWH	220	235	155		2825					00100000				Scale	1	
753	22	1	3	N	MNWH	336	359	520		2819					00100000	H	J	L	Scale	2	
819	22	1	3	N	MNWH	390	410	1355		2818					00100000				Scale		
851	22	1	3	N	MNWH	404	426	1280		2820					00100000				Scale	5	
300	22	1	3	S	MNWH	175	190	65			N	N	B	3	00100000						
309	22	1	3	S	MNWH	181	195	70			N	N	B	3	00100000						
602	22	1	3	S	MNWH	268	288	270		3375					00100000						
700	22	1	3	S	MNWH	310	335	525		3376					00100000						
706	22	1	3	S	MNWH	312	334	500		3377					00100000						
857	22	1	3	S	MNWH	405	435	1310		3372					00100000						
860	22	1	3	S	MNWH	406	439	1195		3374					00100000						
875	22	1	3	S	MNWH	414	445	1315		3373					00100100						
931	22	1	3	S	MNWH	440	472	1420		3371					00100000						
936	22	1	3	S	MNWH	447	482	1600		3364					00100000						
496	22	1	4	N	MNWH	224	239	150	X	3073					00000000						
344	22	1	4	N	MNWH	198	211	105	X		A	3	A,B	3,4	00000000						Snum 344=370
321	22	1	4	N	MNWH	189	200	70					B	4	00100000						
322	22	1	4	N	MNWH	189	206	120					B	4	00100000						
325	22	1	4	N	MNWH	190	201	80					B	4	00100000						
364	22	1	4	N	MNWH	201	214						B	4	00111000				Scale	1	Snum 348=345=364
401	22	1	4	N	MNWH	209	220	75					B	4	00100000				Scale		
427	22	1	4	N	MNWH	213	227	120		2834					00110000				Scale		
455	22	1	4	N	MNWH	218	234	115		2831					00100000				Scale		
494	22	1	4	N	MNWH	224	230	105		2838					00100000				Scale	1	
530	22	1	4	N	MNWH	230	244	165		2829					00100000						
839	22	1	4	N	MNWH	399	424	1260		2833					00100000				Scale	5	
888	22	1	4	N	MNWH	418	444	1370		2826					00100000				Scale	6	
917	22	1	4	N	MNWH	430	464	1570		2835					00100000				Scale	6	
934	22	1	4	N	MNWH	445	476	1685		2830					00100000	H	J	L	Scale	6	
380	22	1	4	S	MNWH	204	223	135			N	N	B	4	00100000						
397	22	1	4	S	MNWH	208	229	120			N	N	B	4	00100000						
403	22	1	4	S	MNWH	209	225	155			N	N	B	4	00100000						
409	22	1	4	S	MNWH	210	227	160			N	N	B	4	00100000						
424	22	1	4	S	MNWH	212	232	155			N	N	B	4	00100000						
489	22	1	4	S	MNWH	223	240	180		3397					00100000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Taxonomy	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Snct.	Date	Snct.		Cause [c]	Loc [d]	Sev [e]			
609	22	1	4	S	MNWH	270	292	300		3396					00100000						
635	22	1	4	S	MNWH	284	310	370		3393					00100000						
701	22	1	4	S	MNWH	310	325	420		3394					00100000						
707	22	1	4	S	MNWH	312	338	475		3395					00100000						
786	22	1	4	S	MNWH	365	396	805		3378					00100000						
879	22	2	1	N	MNWH	415	441	1460	X	2787					00000000	E	B	L			Recap within day
434	22	2	1	N	MNWH	214	230	130		2848					00010000						
497	22	2	1	N	MNWH	225	239	160		2852					00010000						
568	22	2	1	N	MNWH	239	255	185		2845					00010000						
820	22	2	1	N	MNWH	390	417	1020		2846					00010000						
842	22	2	1	N	MNWH	401	409	1075		2849					00010000	E	E	H			
866	22	2	1	N	MNWH	410	425	1555		2860					00010000						
871	22	2	1	N	MNWH	412	439	1425		2859					00010100	H	J	L	Scale	6	
352	22	2	1	S	MNWH	200	214	115			N	N	B	1	00010000						
421	22	2	1	S	MNWH	211	228	130			N	N	B	1	00010000						
423	22	2	1	S	MNWH	212	227	145		3415					00010000						
466	22	2	1	S	MNWH	220	236	145		3413					00010000						
541	22	2	1	S	MNWH	231	250	175		3420					00010000						
597	22	2	1	S	MNWH	265	282	260		3419					00010000						
603	22	2	1	S	MNWH	268	289	260		3416					00010000						
631	22	2	1	S	MNWH	281	307	380		3414					00010000						
650	22	2	1	S	MNWH	292	314	440		3417					00010001						
672	22	2	1	S	MNWH	301	326	565		3398					00010000						
691	22	2	1	S	MNWH	309	331	510		3418					00010000						
793	22	2	1	S	MNWH	371	400	910		3407					00010000						
441	22	2	2	N	MNWH	215	231	135		2875					00010000						
514	22	2	2	N	MNWH	227	239	175		2873					00010000				Scale		
723	22	2	2	N	MNWH	317	336	560		2864					00010000				Scale	2	
745	22	2	2	N	MNWH	325	344	585		2865					00010000				Scale	2	
754	22	2	2	N	MNWH	337	363	730							00000000						Mortality tag 2868
853	22	2	2	N	MNWH	405	431	1110		2866					00010100	H	J	M	Scale	6	
862	22	2	2	N	MNWH	408	425	1340		2862					00010000				Scale	7	
867	22	2	2	N	MNWH	410	432	1355		2861					00010000				Scale		
451	22	2	2	S	MNWH	216	221	130	X	2815					00000000						Recap within day
310	22	2	2	S	MNWH	182	200	90			N	N	B	2	00010000						
467	22	2	2	S	MNWH	220	238	155		3433					00010000						
490	22	2	2	S	MNWH	223	240	180		3432					00010000						
747	22	2	2	S	MNWH	327	352	620		3431					00010010						
326	22	2	3	N	MNWH	190	204	120					B	3	00010000						
388	22	2	3	N	MNWH	206	218	135		3103					00010000						
398	22	2	3	N	MNWH	209	226	135		2894					00010000						
429	22	2	3	N	MNWH	213	230	140		2895					00010000						
428	22	2	3	N	MNWH	213	225	150		2892					00010100						
442	22	2	3	N	MNWH	215	231	160		2897					00010000						
488	22	2	3	N	MNWH	223	238	145		2882					00010000						
498	22	2	3	N	MNWH	225	245	130		2881					00010000				Scale		
515	22	2	3	N	MNWH	227	245	160		2885					00010000						
517	22	2	3	N	MNWH	228	243	170		2883					00010000						
525	22	2	3	N	MNWH	229	249	185		2889					00010000						
526	22	2	3	N	MNWH	229	246	185		2898					00010000						
653	22	2	3	N	MNWH	295	310	415		3101					00000000				Scale	2	Mortality Tag # 3101 dead,
743	22	2	3	N	MNWH	323	347	620		2888					00010000				Scale	4	
868	22	2	3	N	MNWH	410	430	1280		2880					00010000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Reach [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
294	22	2	3	S	MNWH	165	179	50			N	N	B	3	00010000						
353	22	2	3	S	MNWH	200	216	105			N	N	B	3	00010000						
381	22	2	3	S	MNWH	204	219	100			N	N	B	3	00010000						
410	22	2	3	S	MNWH	210	224	120			N	N	B	3	00010000						
507	22	2	3	S	MNWH	225	242	165			N	N	B	3	00010000						
565	22	2	3	S	MNWH	238	255	230		3458					00010000						
598	22	2	3	S	MNWH	265	284	310		3452					00010000						
604	22	2	3	S	MNWH	268	294	295		3451					00010000						
610	22	2	3	S	MNWH	270	291	325		3453					00010000						
637	22	2	3	S	MNWH	285	304	320		3459					00010000	P	T	L			
662	22	2	3	S	MNWH	299	320	400		3457					00010000						
668	22	2	3	S	MNWH	300	324	470		3450					00010000						
686	22	2	3	S	MNWH	307	333	495		3455					00010000						
692	22	2	3	S	MNWH	309	329	440		3456					00010000						
739	22	2	3	S	MNWH	321	344	530		3454					00010000						
741	22	2	3	S	MNWH	322	346	640		3448					00010000						
778	22	2	3	S	MNWH	360	386	830		3449					00010000						
811	22	2	3	S	MNWH	384	415	1070		3447					00010000						
844	22	2	3	S	MNWH	401	422	1250		3446					00010000						
858	22	2	3	S	MNWH	405	435	1190		3444					00010000	H	J	L			
911	22	2	3	S	MNWH	428	452	1225		3445					00010000						
937	22	2	3	S	MNWH	450	474	1590		3442					00010110						
939	22	2	3	S	MNWH	451	488	1775		3443					00010000	P	B	L			
416	22	2	4	N	MNWH	211		120	X	2834					00000000						Recap within day
658	22	2	4	N	MNWH	297	315	400	X	2954					00000000						
505	22	2	4	N	MNWH	265	286	250	X	3062					00000000						
733	22	2	4	N	MNWH	320	345	515	X	3106	A	2			00000000						Tagged at recapture, Snum = 727
348	22	2	4	N	MNWH	200	215	105	X		B	4	B	4	00000000						Recap within day Snum 348=345=364
386	22	2	4	N	MNWH	180	193						B	4	00010000						
516	22	2	4	N	MNWH	185	195	65					B	4	00010000						
362	22	2	4	N	MNWH	201	211	100		3109					00010000						
406	22	2	4	N	MNWH	210	227	130		3110					00010000						
518	22	2	4	N	MNWH	228	244	155		3116					00010000						
543	22	2	4	N	MNWH	232	248	190		3120					00010000						
666	22	2	4	N	MNWH	300	320	405		3107					00010000						
371	22	2	4	S	MNWH	202	216	120			N	N	B	4	00010000						
411	22	2	4	S	MNWH	210	228	115			N	N	B	4	00010000						
460	22	2	4	S	MNWH	219	239	135			N	N	B	4	00010000						
470	22	2	4	S	MNWH	220	238	125			N	N	B	4	00010000						
471	22	2	4	S	MNWH	220	235	145			N	N	B	4	00010000						
502	22	2	4	S	MNWH	225	245	140		3475					00010000						
589	22	2	4	S	MNWH	259	280	245		3474					00010000						
307	23	1	1	N	MNWH	180	193	65					C	1	00001000				Scale	1	
633	23	1	1	N	MNWH	283	301	310		3121					00001000				Scale	2	
311	23	1	1	S	MNWH	182	196				N	N	C	1	00001000						
324	23	1	1	S	MNWH	189	205	70			N	N	C	1	00001000						
385	23	1	1	S	MNWH	205	226	115			N	N	C	1	00001100						Snum 385=347
412	23	1	1	S	MNWH	210	225	100			N	N	C	1	00001000						
600	23	1	1	S	MNWH	266	289	260		3494					00001000				Scale	2	
812	23	1	1	S	MNWH	384	413	950		3492					00001000				Scale	6	
940	23	1	1	S	MNWH	455	491	1630		3493					00001000				Scale	8	
377	23	1	2	N	MNWH	204	223	110		3141					00001000	E	J	L	Scale	1	
394	23	1	2	N	MNWH	208	220	120		3142					00001000				Scale		

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
454	23	1	2	N	MNWH	217	235	135		3139					00001000				Scale	1	
544	23	1	2	N	MNWH	232	245	175		3137					00001000				Scale		
613	23	1	2	N	MNWH	274	293	285		3138					00001000				Scale		
711	23	1	2	N	MNWH	314	339	560		3136					00001000				Scale		
790	23	1	2	N	MNWH	370	393	1085		3134					00001000				Scale	4	
809	23	1	2	N	MNWH	384	408	1165		3135					00001001				Scale	6	
821	23	1	2	N	MNWH	390	417	985		3140					00001000				Scale	7	
854	23	1	2	N	MNWH	405	435	1475		3132					00001000				Scale	5	
909	23	1	2	N	MNWH	428	458	1360		3133					00001000				Scale	6	
660	23	1	2	S	MNWH	298	320	445	X	2812					00000000						
430	23	1	2	S	MNWH	213	232	145		3211					00001000						
482	23	1	2	S	MNWH	222	240	140		3209					00001000				Scale		
545	23	1	2	S	MNWH	232	242	150		3210					00001000				Scale	1	
612	23	1	2	S	MNWH	273	292	310		3202					00001000				Scale	2	
685	23	1	2	S	MNWH	306	328	515		3208					00001000				Scale	2	
724	23	1	2	S	MNWH	317	342	575			N	N	C	2	00001000						
900	23	1	2	S	MNWH	424	456	1565		3499					00001000				Scale	8	
533	23	1	3	N	MNWH	230	246	195		3153					00001000						
554	23	1	3	N	MNWH	235	252	170		3148					00001000				Scale		
562	23	1	3	N	MNWH	236	249	170		3159					00001000						
571	23	1	3	N	MNWH	240	258	180		3160					00001000						
577	23	1	3	N	MNWH	242	261	205		3154					00001000						
624	23	1	3	N	MNWH	279	301	380		3147					00001000				Scale		
625	23	1	3	N	MNWH	279	302	350		3150					00001000				Scale	2	
630	23	1	3	N	MNWH	281	300	315		3158					00001001						
721	23	1	3	N	MNWH	315	338	575							00000000						Mortality
734	23	1	3	N	MNWH	320	342	535		3149					00001000				Scale	4	
757	23	1	3	N	MNWH	340	365	940		3162					00001000						
791	23	1	3	N	MNWH	370	395	910		3164					00001000						
806	23	1	3	N	MNWH	380	406	1075		3156					00001000						
822	23	1	3	N	MNWH	390	413	1005		3151					00001000						
847	23	1	3	N	MNWH	402	431	1210							00000000	E					Mortality
855	23	1	3	N	MNWH	405	435	1495		3152					00001000	E	B	L			
920	23	1	3	N	MNWH	431	462	1605		3155					00001000						
333	23	1	3	S	MNWH	194	210	70			N	N	C	3	00001000						
354	23	1	3	S	MNWH	200	215	85			N	N	C	3	00001000						
386	23	1	3	S	MNWH	205	222	110			N	N	C	3	00001000						
390	23	1	3	S	MNWH	206	222	105			N	N	C	3	00001000						
391	23	1	3	S	MNWH	207	223	110			N	N	C	3	00001000						
404	23	1	3	S	MNWH	209	226	110			N	N	C	3	00001000						
485	23	1	3	S	MNWH	222	240	145			N	N	C	3	00001000						
508	23	1	3	S	MNWH	225	242	150			N	N	C	3	00001000						
536	23	1	3	S	MNWH	230	250	160			N	N	C	3	00001000						
555	23	1	3	S	MNWH	235	252	160		3228					00001000						
556	23	1	3	S	MNWH	235	252	165		3229					00001000						
578	23	1	3	S	MNWH	242	263	190		3221					00001000						
621	23	1	3	S	MNWH	277	300	370		3223					00001000				Scale		
623	23	1	3	S	MNWH	278	300	365		3222					00001000				Scale	2	
632	23	1	3	S	MNWH	282	302	305		3225					00001000						
697	23	1	3	S	MNWH	310	334	445		3226					00001000						
736	23	1	3	S	MNWH	320	340	555		3224					00001000						
735	23	1	3	S	MNWH	320	345	570		3219					00001010				Scale		
779	23	1	3	S	MNWH	361	388	835		3214					00001001				Scale	3	

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Excession	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
783	23	1	3	S	MNWH	363	385	865		3213					00001000				Scale	4	
808	23	1	3	S	MNWH	373	398	965		3218					00001000				Scale	4	
898	23	1	3	S	MNWH	424	449	1370		3216					00000000	E	G	H			Mortality - Male
910	23	1	3	S	MNWH	428	468	1400		3220					00001000				Scale		
923	23	1	3	S	MNWH	434	460	1520		3217					00001000				Scale	6	
345	23	1	4	N	MNWH	198	212	110	X		B	4	B,C	4	00000000						Snum 348=345=364
399	23	1	4	N	MNWH	209	225	135		3171					00001000						
444	23	1	4	N	MNWH	215	236	145		3174					00001000						
452	23	1	4	N	MNWH	216	235	135		3168					00001000						
465	23	1	4	N	MNWH	220	245	150		3169					00001000	E	H	L			
552	23	1	4	N	MNWH	234	254	220					C	4	00001000						May not live
572	23	1	4	N	MNWH	240	259	190		3190					00001000						
591	23	1	4	N	MNWH	260	277	270					C	4	00001000						
601	23	1	4	N	MNWH	267	286	275		3170					00001000						
695	23	1	4	N	MNWH	310	334	485		3167					00001000						
772	23	1	4	N	MNWH	357	382	660		3173					00001000						
782	23	1	4	N	MNWH	362	386	720		3177					00001000						
785	23	1	4	N	MNWH	365	388			3172					00001000						
796	23	1	4	N	MNWH	372	402	965		3180					00001010						
880	23	1	4	N	MNWH	415	440	1515		3175					00001000	H	J	H			
891	23	1	4	N	MNWH	420	450	1535		3176					00001000	E	B	L			
413	23	1	4	S	MNWH	210	224	130			N	N	C	4	00001000						
537	23	1	4	S	MNWH	230	246	165			N	N	C	4	00001000						
558	23	1	4	S	MNWH	235	252	195			N	N	C	4	00001000						
681	23	1	4	S	MNWH	305	322	490		3241					00001000						
841	23	2	1	N	MNWH	400	432	1015	X	2866			C	1	00000000	H	J	L			Left maxillae
383	23	2	1	N	MNWH	205	222	120					C	1	00000100						Tag # 3197 destroyed
468	23	2	1	N	MNWH	220	237	125					C	1	00000100						
586	23	2	1	N	MNWH	255	278	235					C	1	00000100						
627	23	2	1	N	MNWH	279	302	420		3306					00000100						
651	23	2	1	N	MNWH	294	318	405		3304					00000100						
751	23	2	1	N	MNWH	333	356	715		3193					00000101						
764	23	2	1	N	MNWH	346	374	900		3302					00000100						
797	23	2	1	N	MNWH	372	399	1065		3195					00000100						
802	23	2	1	N	MNWH	377	402	955		3194					00000100						
815	23	2	1	N	MNWH	388	413	970		3305					00000100						
869	23	2	1	N	MNWH	410	435	1390							00000000						Mortality
881	23	2	1	N	MNWH	415	443	1385		3198					00000100	H	J	M			Left maxillae
912	23	2	1	N	MNWH	428	449	1160							00000000						Tag # 3196 destroyed Tagging gun broke. No mark applied.
913	23	2	1	N	MNWH	429	455	1555							00000000						Mortality
919	23	2	1	N	MNWH	430	456	1550							00000000						Mortality
347	23	2	1	S	MNWH	199	214	105	X		C	1	C	1	00000000						Recap within day Snum 385=347
348	23	2	1	S	MNWH	195	211	100			N	N	C	1	00000100						
355	23	2	1	S	MNWH	200	216	125			N	N	C	1	00000100						
356	23	2	1	S	MNWH	200	216	80			N	N	C	1	00000100						
422	23	2	1	S	MNWH	211	230	155			N	N	C	1	00000100						
432	23	2	1	S	MNWH	213	230	130			N	N	C	1	00000100						
439	23	2	1	S	MNWH	214	230	140			N	N	C	1	00000100						
509	23	2	1	S	MNWH	225	243	165			N	N	C	1	00000100						
511	23	2	1	S	MNWH	226	244	165			N	N	C	1	00000100						
516	23	2	1	S	MNWH	227	247	165			N	N	C	1	00000100						
553	23	2	1	S	MNWH	234	252	215			N	N	C	1	00000100						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Reach [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Data	Sect.	Data	Sect.		Cause [c]	Loc [d]	Sev [e]			
559	23	2	1	S	MNWH	235	252	185			N	N	C	1	00000100						
592	23	2	1	S	MNWH	260	281	280			N	N	C	1	00000100						
619	23	2	1	S	MNWH	276	298	370		3250					00000100						
698	23	2	1	S	MNWH	310	329	545		3249					00000100						
703	23	2	1	S	MNWH	311	334	510		3262					00000100						
918	23	2	1	S	MNWH	430	461	1405		3248					00000101						
926	23	2	1	S	MNWH	435	471	1615		3247					00000100						
327	23	2	2	N	MNWH	190	217	90					C	2	00000100						
634	23	2	2	N	MNWH	284	302	410		3322					00000100						
682	23	2	2	N	MNWH	305	330	495		3323					00000100						
752	23	2	2	N	MNWH	334	355	665		3321					00000100						
792	23	2	2	N	MNWH	371	399	1075		3320					00000100						
837	23	2	2	N	MNWH	398	424	1325		3319					00000100						
843	23	2	2	N	MNWH	401	424	1295		3315					00000100						
893	23	2	2	N	MNWH	420	450	1420		3316					00000100						
897	23	2	2	N	MNWH	423	451	1540		3318					00000100						
907	23	2	2	N	MNWH	427	459	1505		3317					00000100						
372	23	2	2	S	MNWH	202	219	115			N	N	C	2	00000100						
392	23	2	2	S	MNWH	207	225	145			N	N	C	2	00000100						
472	23	2	2	S	MNWH	220	238	150			N	N	C	2	00000100						
689	23	2	2	S	MNWH	309	334	520		3267					00000100						
787	23	2	2	S	MNWH	369	396	875		3264					00000110	P	B	L			
827	23	2	2	S	MNWH	394	419	1035		3265					00000100						
859	23	2	2	S	MNWH	406	434	1285		3266					00000100						
654	23	2	3	M	MNWH	295	317	435		3327	C				00000100						
865	23	2	3	N	MNWH	410	436	1400	X	2859					00000000	H	J	L			Right Jaw
373	23	2	3	N	MNWH	203	217	120					C	3	00000100						
378	23	2	3	N	MNWH	204	219	100					C	3	00000100						
402	23	2	3	N	MNWH	209	227	130					C	3	00000100						
453	23	2	3	N	MNWH	216	234	135		3332					00000100						
459	23	2	3	N	MNWH	219	232	140					C	3	00000100						
534	23	2	3	N	MNWH	230	248	165		3333					00000100						
540	23	2	3	N	MNWH	231	251	185		3331					00000100						
582	23	2	3	N	MNWH	249	271	240		3326					00000100						
614	23	2	3	N	MNWH	274	295	325		3330					00000100						
648	23	2	3	N	MNWH	292	317	455		3303					00000100						
673	23	2	3	N	MNWH	302	329	485		3329					00000100						
780	23	2	3	N	MNWH	361	388	850		3328	C				00000100						
846	23	2	3	N	MNWH	402	427	1540		3325					00000100						
927	23	2	3	S	MNWH	435	469	1535	X	3317					00000000						Recap within day on subsequent run - excluded
852	23	2	3	S	MNWH	404	444	1305	X	3373					00000000						
938	23	2	3	S	MNWH	451	480	1560	X	3442					00000000						
357	23	2	3	S	MNWH	200	212	105			N	N	C	3	00000100						
447	23	2	3	S	MNWH	215	232	155			N	N	C	3	00000100						
448	23	2	3	S	MNWH	215	231	145			N	N	C	3	00000100						
449	23	2	3	S	MNWH	215	221	135			N	N	C	3	00000100						
461	23	2	3	S	MNWH	219	237	165			N	N	C	3	00000100						
473	23	2	3	S	MNWH	220	235	140			N	N	C	3	00000100						
529	23	2	3	S	MNWH	229	245	190			N	N	C	3	00000100						
585	23	2	3	S	MNWH	254	275	210			N	N	C	3	00000100						
587	23	2	3	S	MNWH	256	274	245			N	N	C	3	00000100						
626	23	2	3	S	MNWH	279	297	305		3290					00000100						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
646	23	2	3	S	MNWH	291	316	455		3291					00000100						
690	23	2	3	S	MNWH	309	332	485		3287					00000100						Caudal Clip
763	23	2	3	S	MNWH	345	370	730		3288					00000100						
824	23	2	3	S	MNWH	392	421	955		2031					00000100						Originally Tagged Last Year
856	23	2	3	S	MNWH	405	430	1135		3284					00000100						
882	23	2	3	S	MNWH	415	444	1195		3285					00000100						
892	23	2	3	S	MNWH	420	448	1450		3286					00000100						
567	23	2	4	N	MNWH	239	259	215	X	2799					00000000						
303	23	2	4	N	MNWH	178	189	65	X		A	3	A,C	3,4	00000000						All Fins Clipped Snum 303=305
323	23	2	4	N	MNWH	189	205	90					C	4	00000100						
349	23	2	4	N	MNWH	200	216	120					C	4	00000100						
407	23	2	4	N	MNWH	210	228	135							00000100						
419	23	2	4	N	MNWH	211	227	140					C	4	00000100						
649	23	2	4	N	MNWH	292	316	385		3347					00000100	E	B	M			
667	23	2	4	N	MNWH	300	323	420		3344					00000100						
699	23	2	4	N	MNWH	310	334	525		3345					00000100						
704	23	2	4	N	MNWH	311	338	560		3346					00000100						
712	23	2	4	N	MNWH	314	338	445		3340					00000100						
713	23	2	4	N	MNWH	314	337	570		3343					00000100						
808	23	2	4	N	MNWH	383	412	935		3342					00000100	H	J	H			Left Jaw Infected
895	23	2	4	N	MNWH	421	440	1170		3338					00000100						
903	23	2	4	N	MNWH	426	452	1750		3339					00000100						
908	23	2	4	N	MNWH	427	450	1430		3341					00000100						
443	23	2	4	S	MNWH	215	230	160	X	2892					00000000						
330	23	2	4	S	MNWH	190	210	110			N	N	C	4	00000100						
358	23	2	4	S	MNWH	200	215	135			N	N	C	4	00000100						
414	23	2	4	S	MNWH	210	225	135			N	N	C	4	00000100						
415	23	2	4	S	MNWH	210	225	120			N	N	C	4	00000100						
450	23	2	4	S	MNWH	215	232	155			N	N	C	4	00000100						
538	23	2	4	S	MNWH	230	246	195			N	N	C	4	00000100						
547	23	2	4	S	MNWH	232	250	190			N	N	C	4	00000100						
720	23	2	4	S	MNWH	315	339	545		3298					00000100						
883	23	2	4	S	MNWH	415	445	1230		3299					00000100						
835	24	1	1	N	MNWH	397	424	1280	X	2803					00000000						
520	24	1	1	N	MNWH	228	246	175					D	1	00000010						
640	24	1	1	N	MNWH	289	305	365					D	1	00000010						
702	24	1	1	N	MNWH	311	333	575		2605					00000010						
810	24	1	1	N	MNWH	384	415	1145		3349					00000010						
828	24	1	1	N	MNWH	395	422	1300		2603					00000010						
884	24	1	1	N	MNWH	415	443	1335		3350					00000010						
289	24	1	1	S	MNWH	159	173	45			N	N	D	1	00000010						
318	24	1	1	S	MNWH	186	201	85			N	N	D	1	00000010						
521	24	1	1	S	MNWH	228	248	165			N	N	D	1	00000010						
548	24	1	1	S	MNWH	232	248	185			N	N	D	1	00000010						
580	24	1	1	S	MNWH	248	265	235			N	N	D	1	00000010						
599	24	1	1	S	MNWH	265	283	280			N	N	D	1	00000010						
722	24	1	1	S	MNWH	316	340	525		2404					00000010						
765	24	1	1	S	MNWH	347	379	805		2401					00000010						
873	24	1	1	S	MNWH	413	444	1355		2405					00000010						
749	24	1	2	N	MNWH	330	356	640		2607					00000010						
760	24	1	2	N	MNWH	341	367	785		2608					00000010						
877	24	1	2	N	MNWH	415	441	1545		2610					00000010						
905	24	1	2	N	MNWH	427	457	1420		2609					00000010	H	J	M			

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Excemeter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
737	24	1	2	S	MNWH	320	347	615	X	3431					00000000						
588	24	1	2	S	MNWH	258	280	255			N	N	D	2	00000010						
696	24	1	3	N	MNWH	310	335	520	X	3219					00000000						
798	24	1	3	N	MNWH	372	394	855	X	3264					00000000						
293	24	1	3	N	MNWH	165	179	45					D	3	00000010						
328	24	1	3	N	MNWH	190	203	95					D	3	00000010						
337	24	1	3	N	MNWH	195	207	85					D	3	00000010						
368	24	1	3	N	MNWH	202	218	120					D	3	00000010						Snum 368=369
483	24	1	3	N	MNWH	222	240	160							00000010						
503	24	1	3	N	MNWH	225	243	155					D	3	00000010						Right Pelvic, Lower Lobe
546	24	1	3	N	MNWH	232	250	205					D	3	00000010						
557	24	1	3	N	MNWH	235	255	180					D	3	00000010						Right Pelvic, Lower Lobe
590	24	1	3	N	MNWH	259	278	250					D	3	00000010						Right Pelvic, Lower Lobe
607	24	1	3	N	MNWH	270	292	275		2619					00000010						
620	24	1	3	N	MNWH	277	296	280		2653					00000010						
652	24	1	3	N	MNWH	295	315	425		2652					00000010						
663	24	1	3	N	MNWH	300	329	405		2615					00000010						
677	24	1	3	N	MNWH	304	328	405		2620					00000010						
725	24	1	3	N	MNWH	318	342	435		2618					00000010						
730	24	1	3	N	MNWH	320	344	575		2617					00000010						
775	24	1	3	N	MNWH	360	385	945		2616					00000010						
816	24	1	3	N	MNWH	390	416	1250		2614					00000010	H	E	H			Right Eye
359	24	1	3	S	MNWH	200	215	100			N	N	D	3	00000010						
425	24	1	3	S	MNWH	212	230	135			N	N	D	3	00000010						Snum 425=393
486	24	1	3	S	MNWH	222	235	150			N	N	D	3	00000011						Snum 446=486
560	24	1	3	S	MNWH	235	252	205			N	N	D	3	00000010						
574	24	1	3	S	MNWH	240	254	195			N	N	D	3	00000010						
674	24	1	3	S	MNWH	302	321	445			N	N	D	3	00000010						
728	24	1	3	S	MNWH	320	333	550		2418					00000010						
742	24	1	3	S	MNWH	323	343	565		2410					00000010						
788	24	1	3	S	MNWH	370	393	975		2415					00000010						
801	24	1	3	S	MNWH	377	407	1105		2417					00000010						
840	24	1	3	S	MNWH	400	430	1370		2416					00000010						
845	24	1	3	S	MNWH	402	431	1225		2414					00000010						
848	24	1	3	S	MNWH	403	435	1090		2411					00000010						
849	24	1	3	S	MNWH	403	435	1485		2413					00000010						
904	24	1	3	S	MNWH	427	460	1445		2412					00000010						
805	24	1	4	N	MNWH	379	402	930	X	3180					00000000						
935	24	1	4	N	MNWH	446	472	1610	X	3442					00000000						
369	24	1	4	N	MNWH	202	218	120	X		D	3	D	3,4	00000000						Recap within day Snum 368=369 captured in subsequent section, excluded.
350	24	1	4	N	MNWH	200	215	95					D	4	00000010						
512	24	1	4	N	MNWH	227	245	160		2656					00000010						
678	24	1	4	N	MNWH	305	330	470		2654					00000010						
890	24	1	4	N	MNWH	420	451	1300		2655					00000010	H	J	M			Right Maxillae
393	24	1	4	S	MNWH	207	222	150	X		D	3	D	3,4	00000000						Recap within day. Snum 393=425 captured in subsequent section, excluded.
312	24	1	4	S	MNWH	182	195	105			N	N	D	4	00000010						
539	24	1	4	S	MNWH	230	247	205			N	N	D	4	00000010						
899	24	2	1	N	MNWH	424	449	1325	X	3248					00000000						
445	24	2	1	N	MNWH	215	231	115					D	1	00000001						
528	24	2	1	N	MNWH	229	246	155					D	1	00000001						
579	24	2	1	N	MNWH	245	266	155					D	1	00000001						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Excessive	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
605	24	2	1	N	MNWH	268	283	210					D	1	00000001						
622	24	2	1	N	MNWH	278	291	325		2662					00000001						
705	24	2	1	N	MNWH	312	337	530		2666					00000001						
715	24	2	1	N	MNWH	315	340	545		2665					00000001	E	B	L			
750	24	2	1	N	MNWH	330	353	575		2657					00000001						
766	24	2	1	N	MNWH	348	373	750		2661					00000001						
768	24	2	1	N	MNWH	351	375	760		2658					00000001						
769	24	2	1	N	MNWH	351	378	820		2664					00000001						
794	24	2	1	N	MNWH	371	392						D	1	00000001						
922	24	2	1	N	MNWH	433	461	1325		2659					00000001						
929	24	2	1	N	MNWH	440	470	1610		2660					00000001						
315	24	2	1	S	MNWH	184	198	95			N	N	D	1	00000001						
334	24	2	1	S	MNWH	194	211				N	N	D	1	00000001						
387	24	2	1	S	MNWH	205	222	125			N	N	D	1	00000001						
561	24	2	1	S	MNWH	235	242	195			N	N	D	1	00000001						
566	24	2	1	S	MNWH	238	256	185			N	N	D	1	00000001						
628	24	2	1	S	MNWH	280	302	355		2507					00000001						
714	24	2	1	S	MNWH	315	340	615		2550					00000001						
784	24	2	1	S	MNWH	364	399	960		2546					00000001						
813	24	2	1	S	MNWH	388	420	1405		2544					00000001						
833	24	2	1	S	MNWH	397	426	1225		2545					00000001						
874	24	2	1	S	MNWH	413	435	1260		2549					00000001						
886	24	2	1	S	MNWH	417	447	1540		2542					00000001						
887	24	2	1	S	MNWH	417	447	1475		2548					00000001						
928	24	2	1	S	MNWH	440	471	1615		2543					00000001						
832	24	2	2	N	MNWH	395	415	1065	X	3135					00000000						
351	24	2	2	N	MNWH	200	215	95					D	2	00000001						
408	24	2	2	N	MNWH	210	225	160					D	2	00000001						
542	24	2	2	N	MNWH	231	248	160					D	2	00000001						
669	24	2	2	N	MNWH	300	321	460					D	2	00000001						
679	24	2	2	N	MNWH	305	326	500		2672					00000001						
804	24	2	2	N	MNWH	379	398	880		2671					00000001				Scale	6	
826	24	2	2	S	MNWH	392	422	1380	X	2544					00000000						Recap within day, same run - excluded
295	24	2	2	S	MNWH	168	188	80			N	N	D	2	00000001						
360	24	2	2	S	MNWH	200	216	125			N	N	D	2	00000001						
374	24	2	2	S	MNWH	203	222	125			N	N	D	2	00000001	H	J	L			
479	24	2	2	S	MNWH	221	235	160			N	N	D	2	00000001						
492	24	2	2	S	MNWH	223	240	175			N	N	D	2	00000001						
510	24	2	2	S	MNWH	225	245	185			N	N	D	2	00000001						
684	24	2	2	S	MNWH	306	332	525		2515					00000001						
729	24	2	2	S	MNWH	320	344	560		2516					00000001						
825	24	2	2	S	MNWH	392	422	1245		2508					00000001						
499	24	2	3	N	MNWH	225	243	140	X	2925					00000000						
629	24	2	3	N	MNWH	280	299	315	X	3158					00000000						
758	24	2	3	N	MNWH	340	362	700	X	3193					00000000						
446	24	2	3	N	MNWH	215	232	130	X		D	3	D	3	00000000						Snum 446=486
389	24	2	3	N	MNWH	206	220	100					D	3	00000001						
437	24	2	3	N	MNWH	214	231	120					D	3	00000001						
484	24	2	3	N	MNWH	222	240	140					D	3	00000001						
504	24	2	3	N	MNWH	225	241	140					D	3	00000001	E	B	L			
505	24	2	3	N	MNWH	225	245	155					D	3	00000001						
549	24	2	3	N	MNWH	233	251	165					D	3	00000001						
661	24	2	3	N	MNWH	299	319	525		2628					00000001						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Code	Sect.	Code	Sect.		Cause [c]	Loc [d]	Sev [e]			
670	24	2	3	N	MNWH	300	321	515							00000000						Mortality, tag # dead
693	24	2	3	N	MNWH	310	335	560		2634					00000001						
731	24	2	3	N	MNWH	320	340	545		2627					000u0001						
767	24	2	3	N	MNWH	350	372	735		2635					00000001	E	B	L			
894	24	2	3	N	MNWH	420	448	1555							00000000						Mortality, tag # dead
493	24	2	3	S	MNWH	223	242	170	X		A	3	A,D	3	00000000						Snum 491=493
474	24	2	3	S	MNWH	220	236	175			N	N	D	3	00000001						
480	24	2	3	S	MNWH	221	237	180			N	N	D	3	00000001						
522	24	2	3	S	MNWH	228	243	195			N	N	D	3	00000001						
563	24	2	3	S	MNWH	236	255	210			N	N	D	3	00000001						
575	24	2	3	S	MNWH	240	256	230			N	N	D	3	00000001						
581	24	2	3	S	MNWH	248	264	235			N	N	D	3	00000001						
606	24	2	3	S	MNWH	268	289	285			N	N	D	3	00000001						
618	24	2	3	S	MNWH	276	295	350		2524					00000001						
638	24	2	3	S	MNWH	288	305	385		2435					00000001						
687	24	2	3	S	MNWH	308	332	480		2521					00000001						
709	24	2	3	S	MNWH	314	338	585		2520					00000001						
726	24	2	3	S	MNWH	319	340	615		2522					00000001						
850	24	2	3	S	MNWH	403	428	1345		2519					00000001						
876	24	2	3	S	MNWH	415	445	1350		2523					00000001	P	B	L			
914	24	2	3	S	MNWH	430	461	1460		2517					00000001						
924	24	2	3	S	MNWH	435	467	1705		2518					00000001						
774	24	2	4	N	MNWH	359	385	805	X	3214					00000000						
636	24	2	4	N	MNWH	285	307	415	X	3417					00000000						
317	24	2	4	N	MNWH	185	203	70							00000001						
384	24	2	4	N	MNWH	205	222	115							00000001						
535	24	2	4	N	MNWH	230	251	185							00000001						
738	24	2	4	N	MNWH	320	346	660							00000001	E	E	M			Both Eyes Bulging
807	24	2	4	N	MNWH	382	406	925							00000001						
863	24	2	4	N	MNWH	408	436	1575							00000001						
889	24	2	4	N	MNWH	419	445	1425							00000001						
361	24	2	4	S	MNWH	200	216	100							00000001						
433	24	2	4	S	MNWH	213	232	160							00000001						
475	24	2	4	S	MNWH	220	236	160							00000001						
523	24	2	4	S	MNWH	228	245	185							00000001						
524	24	2	4	S	MNWH	228	245	195							00000001						
584	24	2	4	S	MNWH	251	270	260							00000001						
611	24	2	4	S	MNWH	272	283	330							00000001						
641	24	2	4	S	MNWH	289	312	395							00000001						
748	24	2	4	S	MNWH	328	351	650							00000001						
759	24	2	4	S	MNWH	340	367	670							00000001						
773	24	2	4	S	MNWH	358	382	820							00000001						
781	24	2	4	S	MNWH	361	390	925							00000001						
803	24	2	4	S	MNWH	378	401	875							00000001						
823	24	2	4	S	MNWH	390	422	1220							00000001						
901	24	2	4	S	MNWH	425	457	1495		2436					00000000						Mortality - Female
933	24	2	4	S	MNWH	445	480	1635		2437					00000001						
1047	21	1	1	N	RNTR	220	231	135		2701					10000000	H	E	H			
953	21	1	1	S	RNTR	178	191	80			N	N	A	1	10000000						
1081	21	1	1	S	RNTR	230	244	165		2902					10000000						
1333	21	1	1	S	RNTR	484	506	1070		2901					10000000	H	J	H			Right Mandible Missing, Caudal Clip - Lower
966	21	1	2	N	RNTR	185	195	95			N	N	A	2	10000000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1174	21	1	2	N	RNTR	384	402	715		2704					10000000						
1025	21	1	2	S	RNTR	212	221	130			N	N	A	2	10000000						
1086	21	1	2	S	RNTR	231	241	145		2912					10000100						
1156	21	1	2	S	RNTR	335	350	500		2911					10000000						
1253	21	1	2	S	RNTR	440	456	1015		2909					10000000	D	G	L			Left Gill Cover Damaged
1303	21	1	2	S	RNTR	461	477	1055		2910					10000000						
951	21	1	3	N	RNTR	177	186	60			N	N	A	3	10000000				Scale	1	
1233	21	1	3	N	RNTR	432	455	1040		2708					11000000	H	J	L	Scale	5	
942	21	1	3	S	RNTR	158	167	55			N	N	A	3	10000000						
944	21	1	3	S	RNTR	164	170	65			N	N	A	3	10000000						
946	21	1	3	S	RNTR	170	179	70			N	N	A	3	10000000						
1010	21	1	3	S	RNTR	207	222	120							00000000						Not marked, excluded
1016	21	1	3	S	RNTR	210	220	130		2930					10000000						
1120	21	1	3	S	RNTR	245	254	195		2929					10000000						
1208	21	1	3	S	RNTR	418	430	820		2928					10000000						
1336	21	1	3	S	RNTR	486	501	1255		2927					10000000						
1375	21	1	3	S	RNTR	530	551	1665		2926					10001000						
1380	21	1	3	S	RNTR	570	597	1715		2918					10000000	H	J	L			Lower Jaw, Left Mandible Damage
1079	21	1	4	N	RNTR	230	240	175		2719					10000000						
1186	21	1	4	N	RNTR	400	422	775		2715					10000000	H	J	L	Scale	2	
1277	21	1	4	N	RNTR	451	475	935		2714					10000000	H	J	L	Scale	3	
1279	21	1	4	N	RNTR	452	480	1200		2713					10000000				Scale	3	
1288	21	1	4	N	RNTR	455	477			2712					10000000	H	E	H			Escaped - included in estimate
1302	21	1	4	N	RNTR	461	485	1130		2709					10000000	H	J	L	Scale	5	
1344	21	1	4	N	RNTR	495	521	1310		2718					10000000	H	J	L	Scale	4	Small burn mark
990	21	1	4	S	RNTR	198	212	80			N	N	A	4	10000010						Snum 997=990
992	21	1	4	S	RNTR	199	205	115		2950					10000000						
1032	21	1	4	S	RNTR	213	221	145			N	N	A	4	10000000						
1056	21	1	4	S	RNTR	222	232	165		2949					10000000						
1065	21	1	4	S	RNTR	225	236	150		2940					10000000						
1245	21	1	4	S	RNTR	436	461	970		2934					10000000	D	F	M			Right Pec. Damage
1297	21	1	4	S	RNTR	458	472	1180		2937					10000000	H	J	L			Lower Jaw
1309	21	1	4	S	RNTR	465	486	1195		2939					10000000						
1330	21	1	4	S	RNTR	481	488	1540		2936					10000001	H	J	H			Left Mandible Damage
1338	21	1	4	S	RNTR	488	511	1485		2935					10000000						
1356	21	1	4	S	RNTR	503	529	1505		2938					10010000						
1361	21	1	4	S	RNTR	508	527	1270		2933					10000000						
967	21	2	1	N	RNTR	187									00000000						Escaped - excluded from estimate
1048	21	2	1	N	RNTR	220	230	135		2742					01000000				Scale		
1077	21	2	1	N	RNTR	229	239	155		2738					01000000				Scale		
1103	21	2	1	N	RNTR	239	245	170		2737					01000000						
1346	21	2	1	N	RNTR	496	515	1450		2721					01010000	H	J	L	Scale	4	
1357	21	2	1	N	RNTR	505	520	1120		2727					01000000	H	J	H			
1367	21	2	1	N	RNTR	515	525	1380		2725					01000000						
1368	21	2	1	N	RNTR	518	530	1570		2724					01000000	H	J	M	Scale	4	
982	21	2	1	S	RNTR	195	205	105			N	N	A	1	01000000				Scale	2	
1005	21	2	1	S	RNTR	205	213	115			N	N	A	1	01000000						
1009	21	2	1	S	RNTR	206	216	120			N	N	A	1	01000000						
1098	21	2	1	S	RNTR	236	249	175		2968					01000000				Scale		
1104	21	2	1	S	RNTR	239	250	150		2970					01000000				Scale	2	
1115	21	2	1	S	RNTR	243	258	200		2965					01000000				Scale		
1258	21	2	1	S	RNTR	442		895							00000000						Escaped - excluded from estimate
1366	21	2	1	S	RNTR	512	537	1550		2971					01000000	H	J	L	Scale		Mandible Damage

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
958	21	2	2	N	RNTR	181	194	70					A	2	01000000	H	J	L			
970	21	2	2	N	RNTR	190	198	95					A	2	01000000						
993	21	2	2	N	RNTR	200	209	110					A	2	01000000						
1183	21	2	2	N	RNTR	397	412	755		2753					01000000	H	E	H			
1349	21	2	2	N	RNTR	498	513	1405		2751					01000000	H	J	L			
943	21	2	2	S	RNTR	162	171	60			N	N	A	2	01000000						
994	21	2	2	S	RNTR	200	211	125			N	N	A	2	01000000				Scale		
1033	21	2	2	S	RNTR	213	221	125			N	N	A	2	01000000						
1050	21	2	2	S	RNTR	220	232	85		2977					01000000				Scale		
1095	21	2	2	S	RNTR	235	245	170		2990					01000000				Scale	2	
1136	21	2	2	S	RNTR	260	270	225		2992					01000000						
1178	21	2	2	S	RNTR	391	410	635		2981					01100000				Scale	3	
1212	21	2	2	S	RNTR	420	436	960		2979					01000000				Scale	3	
1236	21	2	2	S	RNTR	433	454	900		2975					01000000	H	J	L	Scale	4	Right Mandible Gone
987	21	2	3	N	RNTR	197	202	85					A	3	01000000						
1072	21	2	3	N	RNTR	228	244	160		2770					01000000						
1107	21	2	3	N	RNTR	240	252	215		2764					01001000						
1184	21	2	3	N	RNTR	397	415	630		2760					01000000	H	E	H			Mandible damage
1185	21	2	3	N	RNTR	397	411	950		2765					01000000						
1289	21	2	3	N	RNTR	455	475	960		2774					01000000	E	B	L			Missing mandible both sides.
1348	21	2	3	N	RNTR	497	510	1085		2766					01000000						
1239	21	2	3	S	RNTR	435	451	1110	X	2708					00000000	H	J	L			Left Mandible Damaged
972	21	2	3	S	RNTR	190	200	95			N	N	A	3	01000000						
974	21	2	3	S	RNTR	192	200	90			N	N	A	3	01000000						
1006	21	2	3	S	RNTR	205	215	150			N	N	A	3	01000000						
1026	21	2	3	S	RNTR	212	222	135			N	N	A	3	01000000						
1052	21	2	3	S	RNTR	220	230	135			N	N	A	3	01000000						
1082	21	2	3	S	RNTR	230	241	175		3042					01000100				Scale		
1131	21	2	3	S	RNTR	254	264	225		3040					01000000				Scale		
1176	21	2	3	S	RNTR	390	407	785		3034					01000000	H	J	L	Scale	3	Missing Left Mandible.
1237	21	2	3	S	RNTR	434	449	855		3029					01000000				Scale	4	
1291	21	2	3	S	RNTR	455	475	940		3030					01000001				Scale	5	
1300	21	2	3	S	RNTR	459	475	1200		3032					01000000				Scale	5	
1327	21	2	3	S	RNTR	478	483	925		3028					01000000				Scale		Caudal Clip
1382	21	2	3	S	RNTR			995							00000000						Escaped - excluded from estimate
1070	21	2	4	N	RNTR	227	236	150		2777					01000000						
1167	21	2	4	N	RNTR	377	398	665		2775					01000000	H	J	M			
1235	21	2	4	N	RNTR	433	448	880		2779					01000000				Scale	3	
1360	21	2	4	N	RNTR	508	520	1405		2781					01000000	H	J	M	Scale	4	
1374	21	2	4	N	RNTR	530	550	1675		2776					01000000				Scale	5	
995	21	2	4	S	RNTR	200	210	110			N	N	A	4	01000100						Snum 999=995
1024	21	2	4	S	RNTR	212	220	130		3081					01000000						
1083	21	2	4	S	RNTR	230	242	155		3080					01000000	H	G	L			Short Gill Plate - Right Side
1134	21	2	4	S	RNTR	256	266	225		3070					01010000						
1137	21	2	4	S	RNTR	261	272	260		3058					01000000						
1157	21	2	4	S	RNTR	353	368	545		3060					01000000						
1221	21	2	4	S	RNTR	425	442	910		3052					01000000						
1230	21	2	4	S	RNTR	430	448	960		3057					01000000						
1250	21	2	4	S	RNTR	438	460	1030		3051					01000000						
1254	21	2	4	S	RNTR	440	452	855		3054					01000000	H	E	H			HYBRID, Blind In Right Eye
1255	21	2	4	S	RNTR	440	450	935		3059					01000000						
1278	21	2	4	S	RNTR	451	460	1125		3046					01000000						
1304	21	2	4	S	RNTR	461	480	1100		3056					01000000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1323	21	2	4	S	RNTR	472	496	1435		3053					01000000	H	J	L			Lower Jaw Damage
1031	22	1	1	N	RNTR	213	226	140		2796					00100000				Scale		
1064	22	1	1	N	RNTR	225	239	140		2900					00100000	H	J	M	Scale		
1170	22	1	1	N	RNTR	380	398	770		2784					00110000				Scale	2	
1262	22	1	1	N	RNTR	444	456	815		2785					00101000	H	J	M	Scale	4	
1285	22	1	1	N	RNTR	454	470	1070		2798					00100000	H	J	M	Scale	4	
1299	22	1	1	N	RNTR	459	475	985		2792					00100100				Scale	5	
1175	22	1	1	S	RNTR	388	412	630	X	2981					00000000						
1105	22	1	1	S	RNTR	239	246	190		3094					00100000				Scale		
1117	22	1	1	S	RNTR	244	253	205		3093					00100000				Scale	2	
1152	22	1	1	S	RNTR	324	337	345		3095					00100000				Scale	2	
1191	22	1	1	S	RNTR	407	429	820		3084					00100000	P	B	L	Scale	3	
1219	22	1	1	S	RNTR	423	441	845		3085					00100000				Scale	5	
1363	22	1	1	S	RNTR	508	525	1280		3083					00101010				Scale		
961	22	1	2	N	RNTR	183	190	80					B	2	00100000				Scale	1	
1049	22	1	2	N	RNTR	220	227	135		2817					00100000	H	E	H	Scale		
1071	22	1	2	N	RNTR	227	235	160		2814					00100000				Scale		
1142	22	1	2	N	RNTR	273	285	305		2816					00100000				Scale		
1169	22	1	2	N	RNTR	379	393	705		2809					00100000	H	E	M	Scale	3	
1265	22	1	2	N	RNTR	445	461	890		2806					00101000	H	E	H	Scale	5	
1283	22	1	2	N	RNTR	453	472	1135		2811					00100000				Scale	4	
964	22	1	2	S	RNTR	184	195	70			N	N	B	2	00100000				Scale		
1331	22	1	2	S	RNTR	483	505	1040		3098					00100000	H	J	L	Scale	5	
952	22	1	3	N	RNTR	178	184	85					B	3	00100000				Scale		
963	22	1	3	N	RNTR	184	189	80					B	3	00100000				Scale		
1013	22	1	3	N	RNTR	209	218	120		2824					00100000				Scale		
1171	22	1	3	N	RNTR	380	393	515		2821					00100000	H	E	H	Scale		Blind in left eye
973	22	1	3	S	RNTR	190	202	90			N	N	B	3	00100000						
1018	22	1	3	S	RNTR	210	217	125			N	N	B	3	00100000						
1034	22	1	3	S	RNTR	213	222	145			N	N	B	3	00100000						
1116	22	1	3	S	RNTR	243	256	185		3352					00100000				Scale		
1154	22	1	3	S	RNTR	329	341	465		3367					00100000	H	J	L			
1161	22	1	3	S	RNTR	364	380	600		3369					00100000						
1180	22	1	3	S	RNTR	392	412	745		3363					00100000						
1181	22	1	3	S	RNTR	394	412	710		3368					00100000						
1182	22	1	3	S	RNTR	395	412	795		3370					00100000						
1231	22	1	3	S	RNTR	431	449	965		3362					00100000						
1247	22	1	3	S	RNTR	436	452	995		3365					00100100						
1298	22	1	3	S	RNTR	458	481	1110		3366					00100000	H	J	L			
1371	22	1	3	S	RNTR	523	550	1630		3361					00100000				Scale	6	
971	22	1	4	N	RNTR	190	200	105					B	4	00100000	E	E	L	Scale		
1165	22	1	4	N	RNTR	375	389	660		2832					00100000	H	E	L	Scale		
1187	22	1	4	N	RNTR	405	422	495		2839					00101000	H	E	H	Scale	4	Blind right eye, torn maxilla
1355	22	1	4	N	RNTR	502	518	1195		2827					00100000	H	J	L	Scale	5	
1358	22	1	4	N	RNTR	505	520	1385		2837					00100000	H	J	L	Scale	5	
983	22	1	4	S	RNTR	195	205	90			N	N	B	4	00100000						
996	22	1	4	S	RNTR	200	210	120			N	N	B	4	00100000						
1100	22	1	4	S	RNTR	237	250	215		3391					00100000						
1201	22	1	4	S	RNTR	414	439	880		3382					00100000						
1202	22	1	4	S	RNTR	414	433	855		3384					00100000						
1203	22	1	4	S	RNTR	414	430	760		3385					00100100	H	J	M			
1215	22	1	4	S	RNTR	420	435	875		3380					00100000						
1301	22	1	4	S	RNTR	460	481	955		3383					00100000	H	J	L			

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1324	22	1	4	S	RNTR	477	498	1360		3379					00100000						
1353	22	1	4	S	RNTR	500	515	1575		3381					00100000						
1340	22	2	1	N	RNTR	493	499	1370	X	2721					00000000	H	J	L			
1168	22	2	1	N	RNTR	379	395	775	X	2784					00000000						Recap within day
1046	22	2	1	N	RNTR	219	226	135		2854					00010000	H	J	L			
1073	22	2	1	N	RNTR	228	238	155		2851					00010000	E	B	L	Scale		
1097	22	2	1	N	RNTR	236	244	185		2850					00010000				Scale		
1160	22	2	1	N	RNTR	359	374	535		2844					00010000	H	E	M	Scale	3	Missing mandible,
1207	22	2	1	N	RNTR	416	429	795		2842					00010000	H	E	H	Scale	3	Blind left eye, torn mandible
1263	22	2	1	N	RNTR	444	462	1245		2841					00010000				Scale	3	
1308	22	2	1	N	RNTR	465	480	1110		2855					00010000						
1328	22	2	1	N	RNTR	480	490	1325		2856					00010000						
1017	22	2	1	S	RNTR	210	220	145		3411					00010000						
1039	22	2	1	S	RNTR	215	223	140		3412					00010000						
1122	22	2	1	S	RNTR	245	257	185		3408					00010000						
1158	22	2	1	S	RNTR	356	367	550		3400					00010000						Tag #3401-destroyed
1329	22	2	1	S	RNTR	480	510	1205		3403					00010000						
1011	22	2	2	N	RNTR	208	215	120		2878					00010000				Scale	1	
1094	22	2	2	N	RNTR	235	244	190		2879					00010000	E	B	L	Scale		
1252	22	2	2	N	RNTR	440	460	1050		2872					00010000		E	H	Scale	4	Blind in left eye
1274	22	2	2	N	RNTR	450	462	1025		2871					00010100	H	J	M	Scale	4	
1296	22	2	2	N	RNTR	458	470	1060		2863					00010000	H	J	M	Scale	5	
1377	22	2	2	N	RNTR	539	555	1910		2869					00010000				Scale	6	
969	22	2	2	S	RNTR	189	197	85			N	N	B	2	00010000						
1036	22	2	2	S	RNTR	214	225	135			N	N	B	2	00010000						
1040	22	2	2	S	RNTR	215	226	190		3434					00010000						
1053	22	2	2	S	RNTR	220	230	155			N	N	B	2	00010000						
1089	22	2	2	S	RNTR	231	242	155		3435					00010000						
1096	22	2	2	S	RNTR	235	245	200		3437					00010000						
1129	22	2	2	S	RNTR	252	262	235		3436					00010000						
1216	22	2	2	S	RNTR	420	436	740		3422					00010000	H	E	H			
981	22	2	3	N	RNTR	195	205	100					B	3	00010000				Scale		
988	22	2	3	N	RNTR	197	204	100					B	3	00010000				Scale		
1001	22	2	3	N	RNTR	204	215	125		3102					00010000				Scale	1	
1003	22	2	3	N	RNTR	205	214	115		2884					00010000				Scale		
1004	22	2	3	N	RNTR	205	214	120		2893					00010000				Scale		
1035	22	2	3	N	RNTR	214	225	135		2899					00010000				Scale	1	
1080	22	2	3	N	RNTR	230	241	190		2887					00010000				Scale	1	
1149	22	2	3	N	RNTR	301	316	385		2890					00010000	H	J	L	Scale	2	
1226	22	2	3	N	RNTR	429	445	925		3105					00010000	H	J	H	Scale	3	Blind in right eye
1376	22	2	3	N	RNTR	535	552	1620		2896					00010000	H	J	H	Scale	5	
954	22	2	3	S	RNTR	178	208	65			N	N	B	3	00010000						
986	22	2	3	S	RNTR	196	203	110			N	N	B	3	00010000						
998	22	2	3	S	RNTR	201	210	105			N	N	B	3	00010000						
1007	22	2	3	S	RNTR	205	215	150			N	N	B	3	00010000						
1125	22	2	3	S	RNTR	251	262	200		3460					00010000						
1319	22	2	3	S	RNTR	470	492	1265		3439					00010000						
945	22	2	4	N	RNTR	166	180	40					B	4	00010000						
1188	22	2	4	N	RNTR	405	423	925		3111					00010000	H	J	H	Scale	3	
1240	22	2	4	N	RNTR	435	450	955		3112					00010000				Scale	3	
1310	22	2	4	N	RNTR	465	483	1295		3113					00010000	H	J	H	Scale	5	Blind in left eye
1370	22	2	4	N	RNTR	520	535	2065		3114					00010000	H	J	H	Scale	4	
1362	22	2	4	S	RNTR	508	530	1500	X	2938					00000000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1132	22	2	4	S	RNTR	255	271	225	X	3070					00000000						
947	22	2	4	S	RNTR	173	180	65			N	N	B	4	00010000						
948	22	2	4	S	RNTR	174	185	70			N	N	B	4	00010000						
1008	22	2	4	S	RNTR	205	216	105			N	N	B	4	00010000						
1060	22	2	4	S	RNTR	223	232	155		3469					00010000						
1078	22	2	4	S	RNTR	229	239	145		3473					00010000	H	J	L			
1099	22	2	4	S	RNTR	236	246	185		3471					00010000						
1113	22	2	4	S	RNTR	242	252	180		3472					00010000						
1118	22	2	4	S	RNTR	244	252	200		3470					00010000						
1173	22	2	4	S	RNTR	381	408	730		3467					00011000						
1218	22	2	4	S	RNTR	422	441	1000		3463					00010000						
1271	22	2	4	S	RNTR	447	461	1060		3468					00010000						
1270	22	2	4	S	RNTR	447	467	945		3461					00010010						
1287	22	2	4	S	RNTR	454	481	1145		3462					00010000						
1312	22	2	4	S	RNTR	465	480	1175		3466					00010000						
1320	22	2	4	S	RNTR	470	495	1180		3464					00010000						
1321	22	2	4	S	RNTR	470	490	1190		3465					00010000	H	J	L			
1229	23	1	1	N	RNTR	430	455	855	X	2785					00000000						
1359	23	1	1	N	RNTR	505	522	1260	X	3083					00000000						
1012	23	1	1	N	RNTR	208	218	120		3127					00001000	H	J	L	Scale		
1051	23	1	1	N	RNTR	220	231	145		3124					00001000				Scale	1	
1069	23	1	1	N	RNTR	226	241	160		3131					00001000	H	J	H	Scale		
1199	23	1	1	N	RNTR	413	431	865		3123					00001000				Scale	3	
955	23	1	1	S	RNTR	178	190	70			N	N	C	1	00001000						
1054	23	1	1	S	RNTR	221	233	175		3495					00001000				Scale		
1147	23	1	1	S	RNTR	289	306	295		3489					00001000				Scale	2	
1179	23	1	1	S	RNTR	391	405	840		3487					00001000				Scale	3	
1196	23	1	1	S	RNTR	410	428	895		3485					00001000				Scale	3	
1313	23	1	1	S	RNTR	465	490	1310		3484					00001000				Scale	5	
1266	23	1	2	N	RNTR	445	470	835	X	2806					00000000	H	J	M			
1372	23	1	2	N	RNTR	528	545	1615	X	2926					00000000	H	J	H			
1112	23	1	2	N	RNTR	242	257	195		3143					00001000				Scale		
1192	23	1	2	N	RNTR	407	431	1000		3145					00001000				Scale	3	
1315	23	1	2	N	RNTR	469	495	1205		3144					00001000	H	J	L	Scale	4	
960	23	1	2	S	RNTR	182	190	75			N	N	C	2	00001000						
1027	23	1	2	S	RNTR	212	223	125			N	N	C	2	00001010						Snum 1020=1027
1084	23	1	2	S	RNTR	230	243	145		3206					00001000	H	J	L			
1108	23	1	3	N	RNTR	240	255	180	X	2764					00000000						
1109	23	1	3	N	RNTR	240	253	185		3163					00001001	H	J	M			
1268	23	1	3	N	RNTR	445	465	835		3166					00001000	H	E	H			
1193	23	1	3	S	RNTR	408	427	580	X	2839					00000000						
956	23	1	3	S	RNTR	178	188	50			N	N	C	3	00001000						
968	23	1	3	S	RNTR	188	197	75			N	N	C	3	00001000						
1088	23	1	3	S	RNTR	231	244	130		3227					00001000						
1123	23	1	3	S	RNTR	248	257	185		3230					00001000						
1135	23	1	3	S	RNTR	257	268	225		3231					00001000				Scale	2	
1280	23	1	3	S	RNTR	452	471	1020		3212					00001100	H	J	L			Blind Right Eye, HYBRID-Cutbow
1058	23	1	4	N	RNTR	223	236	150		3183					00001000	H	E	M			
1150	23	1	4	N	RNTR	306	322	360		3181					00001000	H	H	H			
1155	23	1	4	N	RNTR	334	355	495		3178					00001000	H	E	H			
1194	23	1	4	N	RNTR	408	430	765		3188					00001000	H	E	H			Left eye
1209	23	1	4	N	RNTR	419	438	655		3189					00001000	H	E	H			Left eye
1213	23	1	4	N	RNTR	420	446	840		3186					00001000						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1241	23	1	4	N	RNTR	435	458	940		3191					00001000	H	E	M			Left eye
1246	23	1	4	N	RNTR	436	463	1090		3182					00001000						
1332	23	1	4	N	RNTR	483	514	1415		3184					00001000	H	J	H			Both maxillae
1339	23	1	4	N	RNTR	489	507	1270		3179					00001000	H	J	M			
1341	23	1	4	N	RNTR	493	517	1395		3185					00001000	H	J	M			Left maxillae
1342	23	1	4	N	RNTR	494	525	1280		3187					00001000	H	J	M			Left maxillae
1172	23	1	4	S	RNTR	380	402	725	X	3467					00000000						
1059	23	1	4	S	RNTR	223	231	155		3237					00001000						
1061	23	1	4	S	RNTR	223	234	105			N	N	C	4	00001000						
1066	23	1	4	S	RNTR	225	237	160		3243					00001000						
1075	23	1	4	S	RNTR	228	236	145		3236					00001000						
1085	23	1	4	S	RNTR	230	240	130			N	N	C	4	00001000						
1121	23	1	4	S	RNTR	245	257	200		3242					00001000						
1140	23	1	4	S	RNTR	268	280	195		3244					00001000						
1222	23	1	4	S	RNTR	428	445	960		3238					00001000						
1110	23	2	1	N	RNTR	240	253	205		3311					00000100						
1128	23	2	1	N	RNTR	252	265	200		3313					00000100						
1166	23	2	1	N	RNTR	376	395	525		3310					00000100	H	H	H			Opercular, blind in right eye
1281	23	2	1	N	RNTR	452	476	1200		3308					00000100						
1317	23	2	1	N	RNTR	470	495	1195		3307					00000100	H	J	H			Torn bad
1318	23	2	1	N	RNTR	470	485	1270		3314					00000100	E	B	L			
1267	23	2	1	S	RNTR	445	470	1060	X	2792					00000000	H	E	L			
1037	23	2	1	S	RNTR	214	222	145			N	N	C	1	00000100						
1041	23	2	1	S	RNTR	215	225	130			N	N	C	1	00000100						
1127	23	2	1	S	RNTR	252	264	225		3258					00000100						
1153	23	2	1	S	RNTR	329	348			3257					00000100						
1159	23	2	1	S	RNTR	357	365	515		3254					00000100	H	E	H			Hybrid (Cut-bow)
1204	23	2	1	S	RNTR	415	444	880		3260					00000100						
1286	23	2	1	S	RNTR	454	468	1170		3259					00000100						
1294	23	2	1	S	RNTR	457	477	1170		3256					00000100						
1354	23	2	1	S	RNTR	501	521	1535		3255					00000100	H	J	L			Hybrid (Cut-bow)
1378	23	2	1	S	RNTR	541	560	1105		3261					00000100						Skinny Fish
1243	23	2	2	N	RNTR	435	453	885		3324					00000100	H	J	L			
1014	23	2	2	S	RNTR	209	229	140			N	N	C	2	00000100						
1015	23	2	2	S	RNTR	209	216	135			N	N	C	2	00000100						
1019	23	2	2	S	RNTR	210	219	125			N	N	C	2	00000100						
1042	23	2	2	S	RNTR	215	224	185			N	N	C	2	00000100						
1256	23	2	2	S	RNTR	442	462	1040		3274					00000101						
1345	23	2	2	S	RNTR	495	520	1495		3275					00000100						
1214	23	2	3	N	RNTR	420	446	950		3334					00000100						
1244	23	2	3	N	RNTR	435	457	870		3335					00000100	H	J	L			Right Maxillae
1365	23	2	3	N	RNTR	508	532	1500		3337					00000100						
1290	23	2	3	S	RNTR	455	472	1020	X	2871					00000000	H	J	L			
1074	23	2	3	S	RNTR	228	238	180	X	2912					00000000						
1087	23	2	3	S	RNTR	231	242	155	X	3042					00000000						
1275	23	2	3	S	RNTR	450	471	1010	X	3212					00000000	H	J	L			Eye Gone Rightside, HYBRID; Recap within day
1238	23	2	3	S	RNTR	434	450	950	X	3365					00000000	H	J	L			
975	23	2	3	S	RNTR	192	202	100			N	N	C	3	00000100						
1038	23	2	3	S	RNTR	214	224	110			N	N	C	3	00000100						
1044	23	2	3	S	RNTR	216	226	150			N	N	C	3	00000100						
1091	23	2	3	S	RNTR	232	243	190			N	N	C	3	00000100						
1177	23	2	3	S	RNTR	390	405	780		3278					00000100						

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Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Enumerator	Injuries			Ageing Structure	Age (yrs)	Comments
											Desc	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1189	23	2	3	S	RNTR	406	422	900		3281					00000100						
1242	23	2	3	S	RNTR	435	448	900		3289					00000100						
1195	23	2	4	N	RNTR	409	427	755	X	3385					00000000						
1101	23	2	4	N	RNTR	238	253	180		3348					00000100						
999	23	2	4	S	RNTR	202	210	140	X		A	4	A,C	4	00000000						Snum 999=995
965	23	2	4	S	RNTR	184	195	110							00000000						Not marked, excluded
976	23	2	4	S	RNTR	192	202	120			N	N	C	4	00000100						
1055	23	2	4	S	RNTR	221	231	200			N	N	C	4	00000100						
1076	23	2	4	S	RNTR	228	235	215			N	N	C	4	00000100						
1090	23	2	4	S	RNTR	231	242	205			N	N	C	4	00000100						
1111	23	2	4	S	RNTR	240	249	215			N	N	C	4	00000100						
1124	23	2	4	S	RNTR	249	260	220			N	N	C	4	00000100						
1126	23	2	4	S	RNTR	251	262	250			N	N	C	4	00000100						
1133	23	2	4	S	RNTR	255	269	260			N	N	C	4	00000100	H	J	L			
1144	23	2	4	S	RNTR	275	285	330		3296					00000100						
1210	23	2	4	S	RNTR	419	435	940		3293					00000100						
1311	23	2	4	S	RNTR	465	482	1265		3294					00000100						
949	24	1	1	N	RNTR	175	185	75					D	1	00000010						
1220	24	1	1	N	RNTR	424	446	910		2602					00000010	E	B	L			
1316	24	1	1	N	RNTR	470	490	1090		2601					00000010	H	J	M			Minor Electro Burn
989	24	1	1	S	RNTR	197	210	115			N	N	D	1	00000010						
1043	24	1	1	S	RNTR	215	225	135			N	N	D	1	00000010						
1334	24	1	1	S	RNTR	485	505	1100		2402					00000010						
1352	24	1	1	S	RNTR	500	515	1260		3300					00000010						
1022	24	1	2	N	RNTR	211	225	85		2612					00000010						
1351	24	1	2	N	RNTR	500	524	1595		2611					00000010	H	J	H			Right Maxillae
1020	24	1	2	S	RNTR	210	223	175	X		C	2	C,D	2	00000000						Snum 1020=1027
1030	24	1	2	S	RNTR	213	245	165		2409					00000010						
1119	24	1	2	S	RNTR	245	264	215		2408					00000010						
1272	24	1	2	S	RNTR	450	475	1015		2407					00000010	H	J	L			Eye Deformed
1162	24	1	3	N	RNTR	369	388	560		2622					00000010	H	E	H			Both Maxillae Gone
1251	24	1	3	N	RNTR	440	460	940		2625					00000010						
1350	24	1	3	N	RNTR	499	514	1380		2624					00000010	H	J	M			Left Maxillae Gone
1369	24	1	3	N	RNTR	519	544	1490		2623					00000010						
962	24	1	3	S	RNTR	183	192	95			N	N	D	3	00000010						
984	24	1	3	S	RNTR	195	203	100			N	N	D	3	00000010						
1023	24	1	3	S	RNTR	211	221	140			N	N	D	3	00000010						
1292	24	1	3	S	RNTR	456	485	1260		2419					00000010						
1379	24	1	3	S	RNTR	555	578	1755		2421					00000010	H	J	L			
1364	24	1	4	S	RNTR	508	525	1300	X	3083					00000000						
1257	24	1	4	S	RNTR	442	460	930	X	3461					00000000						
997	24	1	4	S	RNTR	200	211	100	X		A	4	A,D	4	00000000						Snum 997=990
957	24	1	4	S	RNTR	178	190	60			N	N	D	4	00000010						
980	24	1	4	S	RNTR	193	203	90			N	N	D	4	00000010						
985	24	1	4	S	RNTR	195	207	100			N	N	D	4	00000010						
1092	24	1	4	S	RNTR	204	222	130			N	N	D	4	00000010						
1114	24	1	4	S	RNTR	243	252	180		2536					00000010						
1163	24	1	4	S	RNTR	371		595							00000000	H	J	L			Escaped - excluded from estimate
1164	24	1	4	S	RNTR	375	399	725		2530					00000010						
1190	24	1	4	S	RNTR	407	426	860		2425					00000010	H	J	L			
1211	24	1	4	S	RNTR	420	432	985		2528					00000010						
1228	24	1	4	S	RNTR	430	447	975		2529					00000010						
1248	24	1	4	S	RNTR	437	452	980		2527					00000010						

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1307	24	1	4	S	RNTR	464	482			2526					00000010						
1326	24	1	4	S	RNTR	478	492	1040		2423					00000010						
1335	24	1	4	S	RNTR	486	503	1520		2424					00000010						
1322	24	2	1	N	RNTR	471	498	1490	X	2936					00000000	H	J	H			Right Jaw Badly Torn
1206	24	2	1	N	RNTR	416	432	975		2668					00000001	H	J	H			
1347	24	2	1	N	RNTR	497	524	1330		2669					00000001	H	J	H			Left Jaw
1373	24	2	1	N	RNTR	530	559	1415		2670					00000001	H	E	H			Left Maxillae Gone
1260	24	2	1	S	RNTR	443	463	1010	X	3274					00000000						
950	24	2	1	S	RNTR	176	184	75			N	N	D	1	00000001						
959	24	2	1	S	RNTR	181	190	100			N	N	D	1	00000001						
1000	24	2	1	S	RNTR	202	212	110			N	N	D	1	00000001						
1028	24	2	1	S	RNTR	212	222	130			N	N	D	1	00000001						
1062	24	2	1	S	RNTR	223	233	185			N	N	D	1	00000001						
1093	24	2	1	S	RNTR	235	246	190		2506					00000001						
1130	24	2	1	S	RNTR	253	263	235		2504					00000001						
1148	24	2	1	S	RNTR	293	310	305		2537					00000001						
1151	24	2	1	S	RNTR	320	338	375		2505					00000001	H	J	L			Blind Right Eye
1269	24	2	1	S	RNTR	447	463	1165		2540					00000001						
1273	24	2	1	S	RNTR	450	476	1060		2541					00000001	H	J	L			Right Mandible
1282	24	2	1	S	RNTR	453	463	1175		2539					00000001						
1293	24	2	1	S	RNTR	456	470	1270		2538					00000001						
1045	24	2	2	N	RNTR	219	231	160		2663					00000001						
1197	24	2	2	N	RNTR	411	430	845		2675					00000001	H	J	L			
1259	24	2	2	N	RNTR	443	468	1055		2674					00000001						
1295	24	2	2	N	RNTR	458	482	1335		2673					00000001	H	J	L			Upper Jaw
977	24	2	2	S	RNTR	192	200	105			N	N	D	2	00000001						
1102	24	2	2	S	RNTR	238	248	195			N	N	D	2	00000001						
1141	24	2	2	S	RNTR	270	282	255		2512					00000001						
1225	24	2	2	S	RNTR	429	450	950		2511					00000001						
1106	24	2	3	N	RNTR	239	251	190	X	3163					00000000						
979	24	2	3	N	RNTR	193	203	65					D	3	00000001						
1092	24	2	3	N	RNTR	233	245	145		2632					00000001	H	E	H			Left Eye, Left Face Torn Off
1139	24	2	3	N	RNTR	262	276	270		2626					00000001						
1234	24	2	3	N	RNTR	433	455	975		2630					00000001	H	J	M			Left Maxillae
1264	24	2	3	N	RNTR	445	465	1150		2629					00000001						
1381	24	2	3	N	RNTR	590	619	2330		2146					00000001	H	J	H			Lost both mandible, originally tagged last year
1284	24	2	3	S	RNTR	453	472	970	X	3030					00000000						
978	24	2	3	S	RNTR	192	203	125			N	N	D	3	00000001						
1021	24	2	3	S	RNTR	210	220	155			N	N	D	3	00000001						
1029	24	2	3	S	RNTR	212	223	160			N	N	D	3	00000001						
1057	24	2	3	S	RNTR	222	234	160			N	N	D	3	00000001						
1067	24	2	3	S	RNTR	225	237	185			N	N	D	3	00000001						
1146	24	2	3	S	RNTR	289	303	360		2433					00000001						
1200	24	2	3	S	RNTR	414	432	935		2428					00000001	H	J	L			
1224	24	2	3	S	RNTR	429	449	885		2426					00000001	H	J	L			Right Mandible
1227	24	2	3	S	RNTR	430	446	1095		2525					00000001						
1305	24	2	3	S	RNTR	462	480	1395		2429					00000001	H	J	L			Left Mandible
1343	24	2	3	S	RNTR	495	512	1585		2427					00000001						
1205	24	2	4	N	RNTR	415									00000001	H	J	H			Left Maxillae Gone, Escaped - included in estimate
1232	24	2	4	N	RNTR	431	451	975							00000001	H	J	M			Left Maxillae Damaged
1249	24	2	4	N	RNTR	437	455								00000001	H	J	H			Right Maxillae Gone

Table A1 Raw data for fish captured during the Bow River fisheries assessment, 21 to 24 August 2000.

Sample Number	Date (Aug-00)	Run	Section	Bank [a]	Species [b]	Fork Length (mm)	Total Length (mm)	Weight (g)	Recap	Floy Tag #	Clip @ Capture		Clip @ Release		Encounter	Injuries			Ageing Structure	Age (yrs)	Comments
											Date	Sect.	Date	Sect.		Cause [c]	Loc [d]	Sev [e]			
1261	24	2	4	N	RNTR	444	466	1290		2637					00000001						
1306	24	2	4	N	RNTR	462	484	1310							00000001	H	J	H			Right Maxillae Gone
1337	24	2	4	N	RNTR	487	507	1020							00000001	H	E	H			Right Eye Gone, Right Maxillae
991	24	2	4	S	RNTR	198	206	150							00000001						
1063	24	2	4	S	RNTR	224	236	195							00000001						
1068	24	2	4	S	RNTR	225	235	160							00000001						
1138	24	2	4	S	RNTR	261	272	240							00000001						
1143	24	2	4	S	RNTR	273	287	300							00000001						
1145	24	2	4	S	RNTR	285	295	285							00000001						
1198	24	2	4	S	RNTR	412	428	920							00000001						
1217	24	2	4	S	RNTR	420	443	720							00000001						
1223	24	2	4	S	RNTR	428	444	1055							00000001	H	J	L			Right Mandible
1276	24	2	4	S	RNTR	450	464	815							00000001			H			
1314	24	2	4	S	RNTR	465	470	1240							00000001	H	J	H			Blind, Major Jaw
1325	24	2	4	S	RNTR	477	496	1295							00000001						

[a] N = North, S = South

[b] BLTR = Bull trout, BNTR = Brown trout, BURB = Burbot, LNSC = Longnose sucker, MNWH = Mountain whitefish, RNTR = Rainbow trout

[c] D = Disease, E = Electrofishing, H = Hooking, P = Predation

[d] B = Body, E = Eye, F = Fin, G = Gill, H = Head, J = Jaw, T = Tail

[e] L = Low, M = Medium, H = High

APPENDIX B

CPUE and Life History Data

Table B1. Summary of catch and catch-per-unit-effort (CPUE) for the main sportfish species captured in Bow River, 21-24 August, 2000.

Sampling Day	Sampling Run	Study Section	Sampling Effort		Brown trout			Rainbow trout			Mountain whitefish			TOTAL		
					n	CPUE		n	CPUE		n	CPUE		n	CPUE	
			(m)	(s)		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s
Day 1	1	1	1000	1104	6	6.00	5.43	4	4.00	3.62	4	4.00	3.62	14	14.00	12.68
		2	1000	1023	7	7.00	6.84	7	7.00	6.84	3	3.00	2.93	17	17.00	16.62
		3	1000	1156	5	5.00	4.33	12	12.00	10.38	24	24.00	20.76	41	41.00	35.47
		4	1000	1178	12	12.00	10.19	19	19.00	16.13	4	4.00	3.40	35	35.00	29.71
	Run 1 Total		4000	4461	30	7.50	6.72	42	10.50	9.41	35	8.75	7.85	107	26.75	23.99
	2	1	1000	1341	23	23.00	17.15	16	16.00	11.93	17	17.00	12.68	56	56.00	41.76
		2	1000	1009	11	11.00	10.90	14	14.00	13.88	19	19.00	18.83	44	44.00	43.61
		3	1000	1281	15	15.00	11.71	21	21.00	16.39	24	24.00	18.74	60	60.00	46.84
		4	1000	1346	10	10.00	7.43	19	19.00	14.12	20	20.00	14.86	49	49.00	36.40
	Run 2 Total		4000	4977	59	14.75	11.85	70	17.50	14.06	80	20.00	16.07	209	52.25	41.99
Day 1 Total			8000	9438	89	11.13	9.43	112	14.00	11.87	115	14.38	12.19	316	39.50	33.48
Day 2	1	1	1000	1323	12	12.00	9.07	13	13.00	9.83	17	17.00	12.85	42	42.00	31.75
		2	1000	1128	3	3.00	2.66	9	9.00	7.98	14	14.00	12.41	26	26.00	23.05
		3	1000	1249	9	9.00	7.21	17	17.00	13.61	20	20.00	16.01	46	46.00	36.83
		4	1000	1294	9	9.00	6.96	15	15.00	11.59	26	26.00	20.09	50	50.00	38.64
	Run 1 Total		4000	4994	33	8.25	6.61	54	13.50	10.81	77	19.25	15.42	164	41.00	32.84
	2	1	1000	1333	12	12.00	9.00	15	15.00	11.25	20	20.00	15.00	47	47.00	35.26
		2	1000	1037	16	16.00	15.43	14	14.00	13.50	13	13.00	12.54	43	43.00	41.47
		3	1000	1232	6	6.00	4.87	16	16.00	12.99	38	38.00	30.84	60	60.00	48.70
		4	1000	1292	14	14.00	10.84	23	23.00	17.80	19	19.00	14.71	56	56.00	43.34
	Run 2 Total		4000	4894	48	12.00	9.81	68	17.00	13.89	90	22.50	18.39	206	51.50	42.09
Day 2 Total			8000	9888	81	10.13	8.19	122	15.25	12.34	167	20.88	16.89	370	46.25	37.42
Day 3	1	1	1000	1313	12	12.00	9.14	12	12.00	9.14	9	9.00	6.85	33	33.00	25.13
		2	1000	1005	6	6.00	5.97	8	8.00	7.96	19	19.00	18.91	33	33.00	32.84
		3	1000	1269	3	3.00	2.36	10	10.00	7.88	41	41.00	32.31	54	54.00	42.55
		4	1000	1291	9	9.00	6.97	21	21.00	16.27	20	20.00	15.49	50	50.00	38.73
	Run 1 Total		4000	4878	30	7.50	6.15	51	12.75	10.46	89	22.25	18.25	170	42.50	34.85
	2	1	1000	1529	7	7.00	4.58	17	17.00	11.12	34	34.00	22.24	58	58.00	37.93
		2	1000	1044	4	4.00	3.83	7	7.00	6.70	17	17.00	16.28	28	28.00	26.82
		3	1000	1322	9	9.00	6.81	15	15.00	11.35	35	35.00	26.48	59	59.00	44.63
		4	1000	1258	5	5.00	3.97	15	15.00	11.92	26	26.00	20.67	46	46.00	36.57
	Run 2 Total		4000	5153	25	6.25	4.85	54	13.50	10.48	112	28.00	21.73	191	47.75	37.07
Day 3 Total			8000	10031	55	6.88	5.48	105	13.13	10.47	201	25.13	20.04	361	45.13	35.99
Day 4	1	1	1000	1356	4	4.00	2.95	7	7.00	5.16	16	16.00	11.80	27	27.00	19.91
		2	1000	1001	1	1.00	1.00	6	6.00	5.99	6	6.00	5.99	13	13.00	12.99
		3	1000	1222	6	6.00	4.91	9	9.00	7.36	35	35.00	28.64	50	50.00	40.92
		4	1000	1313	11	11.00	8.38	17	17.00	12.95	10	10.00	7.62	38	38.00	28.94
	Run 1 Total		4000	4892	22	5.50	4.50	39	9.75	7.97	67	16.75	13.70	128	32.00	26.17
	2	1	1000	1676	4	4.00	2.39	18	18.00	10.74	29	29.00	17.30	51	51.00	30.43
		2	1000	1162	6	6.00	5.16	8	8.00	6.88	17	17.00	14.63	31	31.00	26.68
		3	1000	1422	8	8.00	5.63	19	19.00	13.36	33	33.00	23.21	60	60.00	42.19
		4	1000	1588	13	13.00	8.19	18	18.00	11.34	25	25.00	15.74	56	56.00	35.26
	Run 2 Total		4000	5848	31	7.75	5.30	63	15.75	10.77	104	26.00	17.78	198	49.50	33.86
Day 4 Total			8000	10740	53	6.63	4.93	102	12.75	9.50	171	21.38	15.92	326	40.75	30.35
Section 1 Total (Days 1-4)			8000	10975	80	10.00	7.29	102	12.75	9.29	146	18.25	13.30	328	41.00	29.89
Section 2 Total (Days 1-4)			8000	8409	54	6.75	6.42	73	9.13	8.68	108	13.50	12.84	235	29.38	27.95
Section 3 Total (Days 1-4)			8000	10153	61	7.63	6.01	119	14.88	11.72	250	31.25	24.62	430	53.75	42.35
Section 4 Total (Days 1-4)			8000	10560	83	10.38	7.86	147	18.38	13.92	150	18.75	14.20	380	47.50	35.98
Grand Total			32000	40037	278	8.69	6.93	441	13.78	11.00	654	20.44	16.31	1373	42.91	34.24

NOTE: Fish of all sizes are included.

Table B2. Catch and catch-per-unit-effort (CPUE) for three size-classes of brown trout captured in the Bow River, 21-24 August 2000.

Sampling Day	Study Section	Sampling Effort		150 - 250 mm Fork Length			251 - 350 mm Fork Length			>350 mm Fork Length			>149 mm Fork Length		
				n	CPUE		n	CPUE		n	CPUE		n	CPUE	
		(m)	(s)		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s
21-Aug-00	1	2000	2445	17	8.50	6.95	1	0.50	0.41	11	5.50	4.50	29	14.50	11.86
	2	2000	2032	7	3.50	3.44	3	1.50	1.48	8	4.00	3.94	18	9.00	8.86
	3	2000	2437	9	4.50	3.69	5	2.50	2.05	6	3.00	2.46	20	10.00	8.21
	4	2000	2524	7	3.50	2.77	6	3.00	2.38	9	4.50	3.57	22	11.00	8.72
Day 1 Total		**8000**	**9438**	**40**	**5.00**	**4.24**	**15**	**1.88**	**1.59**	**34**	**4.25**	**3.60**	**89**	**11.13**	**9.43**
22-Aug-00	1	2000	2656	13	6.50	4.89	4	2.00	1.51	7	3.50	2.64	24	12.00	9.04
	2	2000	2165	8	4.00	3.70	4	2.00	1.85	7	3.50	3.23	19	9.50	8.78
	3	2000	2481	4	2.00	1.61	1	0.50	0.40	10	5.00	4.03	15	7.50	6.05
	4	2000	2586	13	6.50	5.03	3	1.50	1.16	7	3.50	2.71	23	11.50	8.89
Day 2 Total		**8000**	**9888**	**38**	**4.75**	**3.84**	**12**	**1.50**	**1.21**	**31**	**3.88**	**3.14**	**81**	**10.13**	**8.19**
23-Aug-00	1	2000	2842	9	4.50	3.17	2	1.00	0.70	8	4.00	2.81	19	9.50	6.69
	2	2000	2049	4	2.00	1.95	0	0.00	0.00	6	3.00	2.93	10	5.00	4.88
	3	2000	2591	6	3.00	2.32	3	1.50	1.16	3	1.50	1.16	12	6.00	4.63
	4	2000	2549	1	0.50	0.39	4	2.00	1.57	8	4.00	3.14	13	6.50	5.10
Day 3 Total		**8000**	**10031**	**20**	**2.50**	**1.99**	**9**	**1.13**	**0.90**	**25**	**3.13**	**2.49**	**54**	**6.75**	**5.38**
24-Aug-00	1	2000	3032	4	2.00	1.32	0	0.00	0.00	4	2.00	1.32	8	4.00	2.64
	2	2000	2163	2	1.00	0.92	4	2.00	1.85	1	0.50	0.46	7	3.50	3.24
	3	2000	2644	3	1.50	1.13	2	1.00	0.76	9	4.50	3.40	14	7.00	5.30
	4	2000	2901	13	6.50	4.48	6	3.00	2.07	5	2.50	1.72	24	12.00	8.27
Day 4 Total		**8000**	**10740**	**22**	**2.75**	**2.05**	**12**	**1.50**	**1.12**	**19**	**2.38**	**1.77**	**53**	**6.63**	**4.93**
Section 1 Total (Days 1-4)		8000	10975	43	5.38	3.92	7	0.88	0.64	30	3.75	2.73	80	10.00	7.29
Section 2 Total (Days 1-4)		8000	8409	21	2.63	2.50	11	1.38	1.31	22	2.75	2.62	54	6.75	6.42
Section 3 Total (Days 1-4)		8000	10153	22	2.75	2.17	11	1.38	1.08	28	3.50	2.76	61	7.63	6.01
Section 4 Total (Days 1-4)		8000	10560	34	4.25	3.22	19	2.38	1.80	29	3.63	2.75	82	10.25	7.77
Grand Total		**32000**	**40087**	**120**	**3.75**	**2.99**	**48**	**1.50**	**1.20**	**109**	**3.41**	**2.72**	**277**	**8.66**	**6.91**
CPUE	**Mean** [a]				3.75	3.03		1.50	1.20		3.41	2.75		8.66	6.98
	Standard deviation [a]				1.31	1.18		0.31	0.29		0.83	0.80		2.31	2.18

[a] Means and standard deviations calculated using total CPUE values for each sampling day (n = 4).

Table B3. Catch and catch-per-unit-effort (CPUE) for three size-classes of rainbow trout captured in the Bow River, 21-24 August 2000.

Sampling Day	Study Section	Sampling Effort		150 - 250 mm Fork Length			251 - 350 mm Fork Length			>350 mm Fork Length			>149 mm Fork Length		
				n	CPUE		n	CPUE		n	CPUE		n	CPUE	
		(m)	(s)		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s
21-Aug-00	1	2000	2445	13	6.50	5.32	0	0.00	0.00	7	3.50	2.86	20	10.00	8.18
	2	2000	2032	11	5.50	5.41	2	1.00	0.98	8	4.00	3.94	21	10.50	10.33
	3	2000	2437	16	8.00	6.57	1	0.50	0.41	15	7.50	6.16	32	16.00	13.13
	4	2000	2524	10	5.00	3.96	4	2.00	1.58	24	12.00	9.51	38	19.00	15.06
Day 1 Total		**8000**	**9438**	**50**	**6.25**	**5.32**	**7**	**0.88**	**0.74**	**54**	**6.75**	**5.74**	**111**	**13.88**	**11.80**
22-Aug-00	1	2000	2656	10	5.00	3.77	5	2.50	1.88	13	6.50	4.89	28	14.00	10.54
	2	2000	2165	12	6.00	5.54	3	1.50	1.39	8	4.00	3.70	23	11.50	10.62
	3	2000	2481	18	9.00	7.26	5	2.50	2.02	10	5.00	4.03	33	16.50	13.30
	4	2000	2586	13	6.50	5.03	2	1.00	0.77	23	11.50	8.89	38	19.00	14.69
Day 2 Total		**8000**	**9888**	**53**	**6.63**	**5.36**	**15**	**1.88**	**1.52**	**54**	**6.75**	**5.46**	**122**	**15.25**	**12.34**
23-Aug-00	1	2000	2842	8	4.00	2.81	6	3.00	2.11	15	7.50	5.28	29	14.50	10.20
	2	2000	2049	8	4.00	3.90	0	0.00	0.00	7	3.50	3.42	15	7.50	7.32
	3	2000	2591	12	6.00	4.63	1	0.50	0.39	12	6.00	4.63	25	12.50	9.65
	4	2000	2549	16	8.00	6.28	7	3.50	2.75	13	6.50	5.10	36	18.00	14.12
Day 3 Total		**8000**	**10031**	**44**	**5.50**	**4.39**	**14**	**1.75**	**1.40**	**47**	**5.88**	**4.69**	**105**	**13.13**	**10.47**
24-Aug-00	1	2000	3032	9	4.50	2.97	3	1.50	0.99	13	6.50	4.29	25	12.50	8.25
	2	2000	2163	7	3.50	3.24	1	0.50	0.46	6	3.00	2.77	14	7.00	6.47
	3	2000	2644	11	5.50	4.16	3	1.50	1.13	14	7.00	5.30	28	14.00	10.59
	4	2000	2901	9	4.50	3.10	5	2.50	1.72	21	10.50	7.24	35	17.50	12.06
Day 4 Total		**8000**	**10740**	**36**	**4.50**	**3.35**	**12**	**1.50**	**1.12**	**54**	**6.75**	**5.03**	**102**	**12.75**	**9.50**
Section 1 Total (Days 1-4)		8000	10975	40	5.00	3.64	14	1.75	1.28	48	6.00	4.37	102	12.75	9.29
Section 2 Total (Days 1-4)		8000	8409	38	4.75	4.52	6	0.75	0.71	29	3.63	3.45	73	9.13	8.68
Section 3 Total (Days 1-4)		8000	10153	57	7.13	5.61	10	1.25	0.98	51	6.38	5.02	118	14.75	11.62
Section 4 Total (Days 1-4)		8000	10560	48	6.00	4.55	18	2.25	1.70	81	10.13	7.67	147	18.38	13.92
Grand Total		**32000**	**40065**	**183**	**5.72**	**4.57**	**48**	**1.50**	**1.20**	**209**	**6.53**	**5.22**	**440**	**13.75**	**10.98**
CPUE	Mean [a]				5.72	4.60		1.50	1.19		6.53	5.23		13.75	11.03
	Standard deviation [a]				0.94	0.95		0.44	0.34		0.44	0.47		1.10	1.29

[a] Means and standard deviations calculated using total CPUE values for each sampling day (n = 4).

Table B4. Catch and catch-per-unit-effort (*CPUE*) for three size-classes of mountain whitefish captured in the Bow River, 21-24 August 2000.

Sampling Day	Study Section	Sampling Effort		150 - 199 mm Fork Length			200 - 289 mm Fork Length			>289 mm Fork Length			>149 mm Fork Length		
				n	CPUE		n	CPUE		n	CPUE		n	CPUE	
		(m)	(s)		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s		fish/km	fish/1000s
21-Aug-00	1	2000	2445	6	3.00	2.45	8	4.00	3.27	7	3.50	2.86	21	10.50	8.59
	2	2000	2032	2	1.00	0.98	5	2.50	2.46	15	7.50	7.38	22	11.00	10.83
	3	2000	2437	12	6.00	4.92	18	9.00	7.39	18	9.00	7.39	48	24.00	19.70
	4	2000	2524	5	2.50	1.98	12	6.00	4.75	7	3.50	2.77	24	12.00	9.51
Day 1 Total		**8000**	**9438**	**25**	**3.13**	**2.65**	**43**	**5.38**	**4.56**	**47**	**5.88**	**4.98**	**115**	**14.38**	**12.18**
22-Aug-00	1	2000	2656	1	0.50	0.38	17	8.50	6.40	19	9.50	7.15	37	18.50	13.93
	2	2000	2165	2	1.00	0.92	8	4.00	3.70	17	8.50	7.85	27	13.50	12.47
	3	2000	2481	5	2.50	2.02	26	13.00	10.48	27	13.50	10.88	58	29.00	23.38
	4	2000	2586	6	3.00	2.32	28	14.00	10.83	11	5.50	4.25	45	22.50	17.40
Day 2 Total		**8000**	**9888**	**14**	**1.75**	**1.42**	**79**	**9.88**	**7.99**	**74**	**9.25**	**7.48**	**167**	**20.88**	**16.89**
23-Aug-00	1	2000	2842	5	2.50	1.76	19	9.50	6.69	19	9.50	6.69	43	21.50	15.13
	2	2000	2049	1	0.50	0.49	12	6.00	5.86	23	11.50	11.22	36	18.00	17.57
	3	2000	2591	1	0.50	0.39	39	19.50	15.05	36	18.00	13.89	76	38.00	29.33
	4	2000	2549	4	2.00	1.57	22	11.00	8.63	20	10.00	7.85	46	23.00	18.05
Day 3 Total		**8000**	**10031**	**11**	**1.38**	**1.10**	**92**	**11.50**	**9.17**	**98**	**12.25**	**9.77**	**201**	**25.13**	**20.04**
24-Aug-00	1	2000	3032	4	2.00	1.32	14	7.00	4.62	27	13.50	8.91	45	22.50	14.84
	2	2000	2163	1	0.50	0.46	9	4.50	4.16	13	6.50	6.01	23	11.50	10.63
	3	2000	2644	3	1.50	1.13	31	15.50	11.72	34	17.00	12.86	68	34.00	25.72
	4	2000	2901	2	1.00	0.69	14	7.00	4.83	19	9.50	6.55	35	17.50	12.06
Day 4 Total		**8000**	**10740**	**10**	**1.25**	**0.93**	**68**	**8.50**	**6.33**	**93**	**11.63**	**8.66**	**171**	**21.38**	**15.92**
Section 1 Total (Days 1-4)		8000	10975	16	2.00	1.46	58	7.25	5.28	72	9.00	6.56	146	18.25	13.30
Section 2 Total (Days 1-4)		8000	8409	6	0.75	0.71	34	4.25	4.04	68	8.50	8.09	108	13.50	12.84
Section 3 Total (Days 1-4)		8000	10153	21	2.63	2.07	114	14.25	11.23	115	14.38	11.33	250	31.25	24.62
Section 4 Total (Days 1-4)		8000	10560	17	2.13	1.61	76	9.50	7.20	57	7.13	5.40	150	18.75	[illegible]
Grand Total		**32000**	**40097**	**60**	**1.88**	**1.50**	**282**	**8.81**	**7.03**	**312**	**9.75**	**7.78**	**654**	**20.44**	
CPUE	Mean [a]				1.88	1.52		8.81	7.01		9.75	7.72		20.44	16.49
	Standard deviation [a]				0.86	0.78		2.60	2.01		2.89	2.05		4.46	3.23

[a] Means and standard deviations calculated using total CPUE values for each sampling day (n = 4).

Table B5. Size statistics for brown trout, rainbow trout, and mountain whitefish captured in the Bow River, August 2000.

Species	Size-Class (mm FL)	Fork Length (mm)				Weight (g)				Condition Factor			
		n	Mean	S.D. [1]	Range	*n*	Mean	S.D. [1]	Range	*n*	Mean	S.D. [1]	Range
Brown trout	150-250	*116*	**227**	16	178 - 250	*116*	**154**	36	65 - 245	*116*	**1.29**	0.12	1.00 - 1.57
	251-388	*46*	**294**	53	251 - 385	*46*	**355**	208	150 - 750	*46*	**1.28**	0.11	0.89 - 1.55
	>388	*103*	**469**	56	390 - 624	*103*	**1320**	443	660 - 2520	*103*	**1.24**	0.10	0.98 - 1.46
	All	***265***	**333**	119	178 - 624	***265***	**642**	618	65 - 2520	***265***	**1.27**	0.11	0.89 - 1.57
Rainbow trout	150-250	*176*	**212**	21	158 - 249	*175*	**136**	42	40 - 220	*175*	**1.38**	0.19	0.80 - 1.93
	251-380	*45*	**308**	49	251 - 380	*44*	**393**	169	195 - 770	*44*	**1.30**	0.16	0.94 - 1.59
	>380	*190*	**455**	39	381 - 590	*186*	**1111**	281	495 - 2330	*186*	**1.17**	0.14	0.70 - 1.52
	All	***411***	**335**	120	158 - 590	***405***	**611**	508	40 - 2330	***405***	**1.27**	0.20	0.70 - 1.93
Mountain whitefish	150-199	*55*	**183**	11	155 - 199	*51*	**79**	21	40 - 120	*51*	**1.26**	0.21	0.89 - 1.78
	200-280	*268*	**228**	22	200 - 280	*266*	**174**	65	75 - 420	*266*	**1.42**	0.17	0.81 - 1.93
	>280	*290*	**361**	51	281 - 465	*288*	**921**	423	305 - 1945	*288*	**1.81**	0.20	1.26 - 2.41
	All	***613***	**287**	81	155 - 465	***605***	**522**	482	40 - 1945	***605***	**1.59**	0.28	0.81 - 2.41

[1] S.D. = standard deviation

Table B6. Length-frequency (%) distribution of sport fish sampled in the Bow River, August 2000.

Fork Length Interval (mm)	Brown trout	Rainbow trout	Mountain whitefish	Bull trout	Burbot
70 - 79					
80 - 89					
90 - 99					
100 - 109					
110 - 119					
120 - 129					
130 - 139					
140 - 149					
150 - 159		0.2	0.3		
160 - 169		0.7	1.0		
170 - 179	0.4	2.9	1.5		
180 - 189	0.8	2.9	3.1		
190 - 199	0.8	5.6	3.1		
200 - 209	4.5	5.1	8.8		
210 - 219	5.7	7.3	8.5		
220 - 229	9.8	7.5	10.6		
230 - 239	10.6	6.3	6.4		
240 - 249	9.4	4.1	2.1		
250 - 259	9.4	2.4	1.3	33.3	
260 - 269	3.0	1.2	2.4	33.3	
270 - 279	0.4	1.0	3.4		
280 - 289	1.5	0.7	2.0		
290 - 299		0.2	3.1	33.3	
300 - 309		0.5	4.9		
310 - 319			5.5		
320 - 329		1.0	3.1		
330 - 339		0.5	1.1		
340 - 349	0.4		1.6		
350 - 359		1.0	1.1		
360 - 369	0.4	0.5	2.1		
370 - 379	1.1	1.5	2.6		
380 - 389	3.0	1.0	1.6		
390 - 399	4.5	2.4	3.4		
400 - 409	4.2	1.9	3.6		
410 - 419	2.6	3.6	3.9		
420 - 429	2.3	3.9	3.8		
430 - 439	1.1	5.1	2.0		
440 - 449	0.4	4.1	1.3		
450 - 459	0.8	6.3	0.5		25.0
460 - 469	1.5	3.6	0.2		
470 - 479	2.3	2.7			
480 - 489	4.2	2.9			
490 - 499	2.6	2.4			
500 - 509	1.5	2.9			
510 - 519	2.6	1.0			
520 - 529	2.6	0.5			
530 - 539	2.6	1.2			50.0
540 - 549	1.1	0.2			
550 - 559		0.2			
560 - 569					
570 - 579	0.8	0.2			
580 - 589	0.4				
590 - 599		0.2			
600 - 609	0.4				
610 - 619					
620 - 629	0.4				
630 - 639					
640 - 649					25.0
650 - 659					
660 - 669					
670 - 679					
680 - 689					
Sample Size	***265***	***411***	***613***	***3***	***4***

Table B7. Raw data for aged fish captured in the Bow River, August 2000.

Date Aug-00	Section	Species	FL (mm)	WT (g)	Sample # [a]	Structure [b]	Age (yrs)
22	2	BNTR	180	70		SC	1
23	1	BNTR	204	115	3130	SC	1
22	3	BNTR	207	125	3104	SC	1
22	1	BNTR	212	115	2843	SC	1
21	1	BNTR	223	135	2973	SC	1
22	4	BNTR	230	145	2836	SC	1
21	2	BNTR	190	75		SC	2
23	1	BNTR	200	95	3122	SC	2
24	4	BNTR	212	110	2639	SC	2
22	3	BNTR	215	130	2891	SC	2
23	1	BNTR	215	110	3129	SC	2
23	1	BNTR	216	130	3496	SC	2
22	1	BNTR	218	120	2800	SC	2
24	1	BNTR	226	175	2503	SC	2
22	1	BNTR	227	155	2797	SC	2
21	1	BNTR	228	170	2741	SC	2
21	1	BNTR	230	155	2722	SC	2
23	1	BNTR	232	165	3126	SC	2
23	1	BNTR	234	180	3125	SC	2
22	2	BNTR	237	175	2876	SC	2
21	1	BNTR	240	210	2961	SC	2
29	1	BNTR	241	125	B2	SO	2
21	3	BNTR	244	210	3039	SC	2
21	1	BNTR	245	180	2967	SC	2
23	2	BNTR	246	175	3205	SC	2
23	3	BNTR	248	180	3161	SC	2
24	1	BNTR	249	175	2667	SC	2
24	2	BNTR	252	210	2514	SC	2
22	2	BNTR	254	225	2874	SC	2
22	2	BNTR	257	205	3100	SC	2
22	1	BNTR	258	210	2791	SC	2
29	1	BNTR	260	185	B3	SO	2
22	2	BNTR	261	250	2877	SC	2
23	4	BNTR	265	265	3233	SC	2
30	2	BNTR	268	270	B9	SO	2
30	4	BNTR	281	320	B11	SO	2
30	6	BNTR	281	300	B13	SO	2
21	3	BNTR	284	285	3036	SC	2
23	4	BNTR	271	200	3245	SC	3
22	3	BNTR	380	740	3358	SC	3
24	3	BNTR	380	750	2432	SC	3
24	2	BNTR	382	660	2509	SC	3
23	1	BNTR	384	665	3486	SC	3
29	1	BNTR	384	680	B1	SO	3
23	4	BNTR	392	720	3240	SC	3
24	3	BNTR	399	845	2621	SC	3
23	1	BNTR	402	900	3251	SC	3
21	1	BNTR	404	890	2966	SC	3
30	1	BNTR	406	895	B6	SO	3
24	3	BNTR	414	900	2651	SC	3
24	1	BNTR	415	915	2501	SC	3
23	3	BNTR	427	1080	3336	SC	3
21	2	BNTR	429	1020	2706	SC	3

Table B7. Raw data for aged fish captured in the Bow River, August 2000.

Date Aug-00	Section	Species	FL (mm)	WT (g)	Sample # [a]	Structure [b]	Age (yrs)
23	2	BNTR	435	915	3203	SC	3
23	1	BNTR	385	700	3263	SC	4
22	4	BNTR	393	775	2828	SC	4
24	4	BNTR	397	795	2531	SC	4
30	4	BNTR	408	1090	B12	SO	4
24	1	BNTR	410	825	2406	SC	4
23	1	BNTR	429	1015	3252	SC	4
30	3	BNTR	438	1360	B10	SO	4
23	4	BNTR	440	1245	3239	SC	4
24	1	BNTR	461	1315	2604	SC	4
30	1	BNTR	461	1245	B5	SO	4
30	2	BNTR	462	1235	B7	SO	4
24	3	BNTR	468	1190	2631	SC	4
23	3	BNTR	471	1510	3276	SC	4
23	1	BNTR	476	1210	3309	SC	4
22	1	BNTR	480	1305	3096	SC	4
23	1	BNTR	480	1225	3488	SC	4
30	2	BNTR	480	1540	B8	SO	4
30	1	BNTR	480	1310	B4	SO	4
23	2	BNTR	500	1670	3146	SC	4
24	3	BNTR	390	755	2431	SC	5
23	1	BNTR	470	1340	3253	SC	5
21	1	BNTR	480	1430	2963	SC	5
22	3	BNTR	481	1305	3356	SC	5
23	2	BNTR	485	1295	3207	SC	5
22	3	BNTR	487	1560	3355	SC	5
21	3	BNTR	492	1535	2993	SC	5
23	4	BNTR	492	1370	3234	SC	5
24	3	BNTR	493	1505	2420	SC	5
24	3	BNTR	520	1685	2422	SC	5
21	1	BNTR	505	1520	2964	SC	6
23	2	BNTR	507	1560	3273	SC	6
23	2	BNTR	510	1630	3269	SC	6
23	4	BNTR	511	1630	3192	SC	6
21	4	BNTR	512	1470	2711	SC	6
22	3	BNTR	520	1895	3357	SC	6
23	2	BNTR	523	1615	3201	SC	6
23	4	BNTR	539	1845	3235	SC	6
21	3	BNTR	540	2030	2995	SC	6
21	3	BNTR	586	2220	3027	SC	6
23	1	BNTR	516	1470	3491	SC	7
24	1	BNTR	525	1900	2502	SC	7
22	3	BNTR	534	1810	3354	SC	7
23	1	BNTR	570	2115	3490	SC	8
30	1	MNWH	118	35	M30	SO	1
29	1	MNWH	150	45	M8	SO	1
29	4	MNWH	150	40	M20	SC	1
29	4	MNWH	155	50	M21	SO	1
23	1	MNWH	180	65		SC	1
21	1	MNWH	180	70		SC	1
22	3	MNWH	188	85		SC	1
21	1	MNWH	195	90		SC	1
22	1	MNWH	199	110		SC	1
22	4	MNWH	201	195		SC	1

Table B7. Raw data for aged fish captured in the Bow River, August 2000.

Date Aug-00	Section	Species	FL (mm)	WT (g)	Sample # [a]	Structure [b]	Age (yrs)
23	2	MNWH	204	110	3141	SC	1
22	3	MNWH	208	120		SC	1
22	3	MNWH	210	105	2822	SC	1
21	2	MNWH	211	145	2987	SC	1
23	2	MNWH	217	135	3139	SC	1
22	3	MNWH	220	155	2825	SC	1
22	4	MNWH	224	105	2838	SC	1
29	4	MNWH	225	180	M19	SO	1
21	2	MNWH	230	185	2986	SC	1
23	2	MNWH	232	150	3210	SC	1
29	3	MNWH	240	195	M18	SO	2
30	1	MNWH	252	240	M24	SO	2
23	1	MNWH	266	260	3494	SC	2
23	2	MNWH	273	310	3202	SC	2
21	2	MNWH	275	310	2989	SC	2
23	3	MNWH	278	365	3222	SC	2
23	3	MNWH	279	350	3150	SC	2
23	1	MNWH	283	310	3121	SC	2
21	2	MNWH	289	415	2982	SC	2
22	3	MNWH	295	415	3101	SC	2
22	2	MNWH	296	430	2812	SC	2
22	1	MNWH	303	460	3091	SC	2
22	2	MNWH	305	475	2807	SC	2
23	2	MNWH	306	515	3208	SC	2
21	2	MNWH	315	550	2974	SC	2
22	2	MNWH	317	560	2864	SC	2
21	2	MNWH	319	540		SC	2
22	2	MNWH	325	585	2865	SC	2
22	3	MNWH	336	520	2819	SC	2
30	1	MNWH	255	315	M23	SO	3
29	2	MNWH	272	335	M12	SO	3
22	2	MNWH	275	320	2810	SC	3
29	1	MNWH	277	320	M7	SO	3
29	1	MNWH	280	380	M6	SO	3
30	1	MNWH	290	375	M22	SO	3
30	1	MNWH	292	415	M28	SO	3
22	1	MNWH	297	450	3092	SC	3
21	2	MNWH	300	500	2985	SC	3
29	2	MNWH	315	535	M11	SO	3
29	3	MNWH	340	705	M17	SO	3
29	3	MNWH	342	770	M16	SO	3
30	1	MNWH	345	810	M29	SO	3
21	2	MNWH	354	785	2984	SC	3
21	3	MNWH	360	820	2994	SC	3
23	3	MNWH	361	835	3214	SC	3
22	2	MNWH	373	880	2804	SC	3
22	2	MNWH	290	350	3099	SC	4
23	3	MNWH	320	535	3149	SC	4
22	3	MNWH	323	620	2888	SC	4
22	1	MNWH	326	600	3090	SC	4
30	2	MNWH	330	590	M32	SO	4
22	2	MNWH	340	700	2808	SC	4
23	3	MNWH	363	865	3213	SC	4
29	3	MNWH	366	860	M15	SO	4

Table B7. Raw data for aged fish captured in the Bow River, August 2000.

Date Aug-00	Section	Species	FL (mm)	WT (g)	Sample # [a]	Structure [b]	Age (yrs)
23	2	MNWH	370	1085	3134	SC	4
21	2	MNWH	370	850	2983	SC	4
23	3	MNWH	373	965	3218	SC	4
22	4	MNWH	399	1260	2833	SC	5
22	3	MNWH	404	1280	2820	SC	5
23	2	MNWH	405	1475	3132	SC	5
29	1	MNWH	433	1590	M4	SO	5
30	1	MNWH	368	995	M27	SO	6
30	2	MNWH	378	925	M31	SO	6
29	1	MNWH	378	1135	M1	SC	6
24	2	MNWH	379	880	2671	SC	6
23	2	MNWH	384	1165	3135	SC	6
23	1	MNWH	384	950	3492	SC	6
22	2	MNWH	390	1295	2803	SC	6
30	1	MNWH	393	930	M26	SO	6
22	2	MNWH	405	1110	2866	SC	6
29	2	MNWH	407	1275	M10	SO	6
29	2	MNWH	410	1400	M9	SO	6
22	1	MNWH	412	1425	2859	SC	6
22	1	MNWH	415	1440	2787	SC	6
29	3	MNWH	415	1270	M14	SO	6
22	4	MNWH	418	1370	2826	SC	6
22	1	MNWH	427	1605	3086	SC	6
23	2	MNWH	428	1360	3133	SC	6
22	4	MNWH	430	1570	2835	SC	6
23	3	MNWH	434	1520	3217	SC	6
22	1	MNWH	435	1410	3088	SC	6
22	4	MNWH	445	1685	2830	SC	6
23	2	MNWH	390	985	3140	SC	7
29	1	MNWH	392	1090	M5	SO	7
22	2	MNWH	408	1340	2862	SC	7
22	1	MNWH	411	1405	3087	SC	7
29	1	MNWH	420	1370	M2	SO	7
30	1	MNWH	460	1855	M25	SO	7
29	1	MNWH	395	970	M3	SO	8
23	2	MNWH	424	1565	3499	SC	8
23	1	MNWH	455	1630	3493	SC	8
22	2	MNWH	410	1235	2805	SC	13
30	3	RNTR	155	50	R26	SO	1
29	4	RNTR	173	85	R9	SO	1
29	1	RNTR	176	75	R4	SO	1
21	3	RNTR	177	60		SC	1
22	2	RNTR	183	80		SC	1
30	1	RNTR	187	90	R18	SO	1
30	4	RNTR	190	105	R29	SO	1
22	3	RNTR	204	125	3102	SC	1
22	2	RNTR	208	120	2878	SC	1
22	3	RNTR	214	135	2899	SC	1
23	1	RNTR	220	145	3124	SC	1
22	3	RNTR	230	190	2887	SC	1
21	1	RNTR	195	105		SC	2
30	1	RNTR	195	110	R19	SO	2
30	3	RNTR	198	105	R25	SO	2
30	3	RNTR	212	145	R24	SO	2

Table B7. Raw data for aged fish captured in the Bow River, August 2000.

Date Aug-00	Section	Species	FL (mm)	WT (g)	Sample # [a]	Structure [b]	Age (yrs)
30	2	RNTR	226	165	R22	SO	2
30	4	RNTR	232	190	R28	SO	2
21	2	RNTR	235	170	2990	SC	2
21	1	RNTR	239	150	2970	SC	2
29	4	RNTR	240	210	R10	SO	2
22	1	RNTR	244	205	3093	SC	2
30	1	RNTR	245	220	R17	SO	2
23	3	RNTR	257	225	3231	SC	2
23	1	RNTR	289	295	3489	SC	2
30	4	RNTR	295	410	R27	SO	2
22	3	RNTR	301	385	2890	SC	2
30	3	RNTR	307	450	R23	SO	2
22	1	RNTR	324	345	3095	SC	2
29	3	RNTR	335	500	R7	SO	2
22	1	RNTR	380	770	2784	SC	2
21	4	RNTR	400	775	2715	SC	2
30	2	RNTR	344	605	R21	SO	3
22	1	RNTR	359	535	2844	SC	3
30	2	RNTR	360	645	R20	SO	3
30	1	RNTR	374	590	R16	SO	3
22	2	RNTR	379	705	2809	SC	3
30	5	RNTR	380	810	R30	SO	3
21	3	RNTR	390	785	3034	SC	3
23	1	RNTR	391	840	3487	SC	3
21	2	RNTR	391	635	2981	SC	3
29	2	RNTR	402	830	R5	SO	3
29	1	RNTR	402	860	R1	SO	3
22	4	RNTR	405	925	3111	SC	3
23	2	RNTR	407	1000	3145	SC	3
22	1	RNTR	407	820	3084	SC	3
23	1	RNTR	410	895	3485	SC	3
23	1	RNTR	413	865	3123	SC	3
29	1	RNTR	413	815	R3	SO	3
22	1	RNTR	416	795	2842	SC	3
21	2	RNTR	420	960	2979	SC	3
22	3	RNTR	429	925	3105	SC	3
21	4	RNTR	433	880	2779	SC	3
22	4	RNTR	435	955	3112	SC	3
22	1	RNTR	444	1245	2841	SC	3
21	4	RNTR	451	935	2714	SC	3
21	4	RNTR	452	1200	2713	SC	3
22	4	RNTR	405	495	2839	SC	4
29	4	RNTR	424	850	R13	SO	4
29	4	RNTR	430	1015	R11	SO	4
21	2	RNTR	433	900	2975	SC	4
21	3	RNTR	434	855	3029	SC	4
22	2	RNTR	440	1050	2872	SC	4
22	1	RNTR	444	815	2785	SC	4
29	1	RNTR	446	1010	R2	SO	4
22	2	RNTR	450	1025	2871	SC	4
22	2	RNTR	453	1135	2811	SC	4
22	1	RNTR	454	1070	2798	SC	4
23	2	RNTR	469	1205	3144	SC	4
21	4	RNTR	495	1310	2718	SC	4

Table B7. Raw data for aged fish captured in the Bow River, August 2000.

Date Aug-00	Section	Species	FL (mm)	WT (g)	Sample # [a]	Structure [b]	Age (yrs)
21	1	RNTR	496	1450	2721	SC	4
21	4	RNTR	508	1405	2781	SC	4
21	1	RNTR	518	1570	2724	SC	4
22	4	RNTR	520	2065	3114	SC	4
22	1	RNTR	423	845	3085	SC	5
21	3	RNTR	432	1040	2708	SC	5
29	3	RNTR	435	1640	R8	SO	5
22	2	RNTR	445	890	2806	SC	5
30	1	RNTR	448	1045	R15	SO	5
21	3	RNTR	455	940	3030	SC	5
22	2	RNTR	458	1060	2863	SC	5
22	1	RNTR	459	985	2792	SC	5
21	3	RNTR	459	1200	3032	SC	5
21	4	RNTR	461	1130	2709	SC	5
22	4	RNTR	465	1295	3113	SC	5
23	1	RNTR	465	1310	3484	SC	5
29	4	RNTR	465	1130	R12	SO	5
29	4	RNTR	470	1225	R14	SO	5
22	2	RNTR	483	1040	3098	SC	5
22	4	RNTR	502	1195	2827	SC	5
22	4	RNTR	505	1385	2837	SC	5
29	2	RNTR	511	1350	R6	SO	5
21	4	RNTR	530	1675	2776	SC	5
22	3	RNTR	535	1620	2896	SC	5
22	3	RNTR	523	1630	3361	SC	6
22	2	RNTR	539	1910	2869	SC	6

[a] Indicate either Floy tag number or Alberta Environment identification tag (e.g., R12). Blanks indicate fish which were fin clipped during the Bow River population estimate study.

[b] SC = scale; SO = scale and otolith

Table B8. Age-specific fork lengths and weights of brown trout and rainbow trout captured in the Bow River, August 2000.

Species	Age (years)	Fork Length (mm)				Weight (g)			
		n	Mean	S.D.[a]	Range	*n*	Mean	S.D.[a]	Range
Brown trout	1	6	**209**	17	180 - 230	6	**118**	26	70 - 145
(n = 97)	2	32	**241**	23	190 - 284	32	**185**	60	75 - 320
	3	16	**394**	37	271 - 435	16	**798**	203	200 - 1080
	4	19	**448**	35	385 - 500	19	**1187**	267	700 - 1670
	5	10	**479**	34	390 - 520	10	**1378**	252	755 - 1685
	6	10	**525**	25	505 - 586	10	**1742**	246	1470 - 2220
	7	3	**525**	9	516 - 534	3	**1727**	227	1470 - 1900
	8	1	**570**	-	570 - 570	1	**2115**	-	2115 - 2115
Rainbow trout	1	12	**193**	22	155 - 230	12	**105**	40	50 - 190
(n = 96)	2	20	**267**	59	195 - 400	20	**297**	201	105 - 775
	3	25	**404**	28	344 - 452	25	**842**	170	535 - 1245
	4	17	**460**	35	405 - 520	17	**1131**	357	495 - 2065
	5	20	**470**	31	423 - 535	20	**1200**	242	845 - 1675
	6	2	**531**	11	523 - 539	2	**1770**	198	1630 - 1910
Mountain whitefish	1	20	**195**	31	118 - 232	20	**109**	49	35 - 195
(n = 102)	2	19	**292**	25	240 - 336	19	**411**	119	195 - 585
	3	17	**313**	38	255 - 373	17	**562**	217	315 - 880
	4	11	**343**	27	290 - 373	11	**729**	215	350 - 1085
	5	4	**410**	15	399 - 433	4	**1401**	159	1260 - 1590
	6	21	**406**	23	368 - 445	21	**1272**	241	880 - 1685
	7	6	**414**	26	390 - 460	6	**1341**	303	985 - 1855
	8	3	**425**	30	395 - 455	3	**1388**	364	970 - 1630
	13	1	**410**	-	410 - 410	1	**1235**	-	1235 - 1235

[a] standard deviation

Table B9 Number of injured fish recorded during fish population assessment in the Bow River, August 2000.

Cause	Location	Severity (L/M/H) [a]	Brown Trout Size-Class (mm FL)				Rainbow Trout Size-Class (mm FL)				Mountain Whitefish Size-Class (mm FL)				Total
			150-250	251-380	>380	Total	150-250	251-380	>380	Total	150-199	200-280	>280	Total	
Disease	Fin	M							1	1					1
	Gill	L							1	1					1
	Subtotal								***2***	***2***					***2***
Electrofishing	Body	L					2		5	7		1	5	6	13
		M											1	1	1
	Eye	L					1			1					1
		M											1	1	1
		H											1	1	1
	Gill	H											1	1	1
	Head	L										1		1	1
	Jaw	L										1		1	1
	Subtotal						***3***		***5***	***8***		***3***	***9***	***12***	***20***
Hooking	Eye	L			1	1	1	1		2					3
		M					2	2	1	5					5
		H	2		3	5	3	6	18	27			1	1	33
	Gill	L	1			1	1			1					2
	Head	H						2		2					2
	Jaw	L	6	2	11	19	5	5	37	47		1	5	6	72
		M	2	1	6	9	2	1	15	18			6	6	33
		H					1		20	21			2	2	23
	Subtotal		***11***	***3***	***21***	***35***	***15***	***17***	***91***	***123***		***1***	***14***	***15***	***173***
Predation	Body	L			1	1			1	1			3	3	5
		H			1	1							1	1	2
	Tail	L											1	1	1
	Subtotal				***2***	***2***			***1***	***1***			***5***	***5***	***8***
Fish with No Injuries			107	43	81	231	160	30	104	294	55	264	262	581	1106
Total Number of Injuries			11	3	23	37	18	17	99	134		4	28	32	203
Fish Examined [b]			116	46	103	265	176	45	190	411	55	268	290	613	1289
% Injured [c]			***7.8***	***6.5***	***21.4***	***12.8***	***9.1***	***33.3***	***45.3***	***28.5***	***0.0***	***1.5***	***9.7***	***5.2***	***14.2***

[a] L = Low; M = Moderate; H = High

[b] Fish with multiple injuries are reported separately for each injury type.

[c] (Fish Examined-Fish with No Injuries)/Fish Examined*100

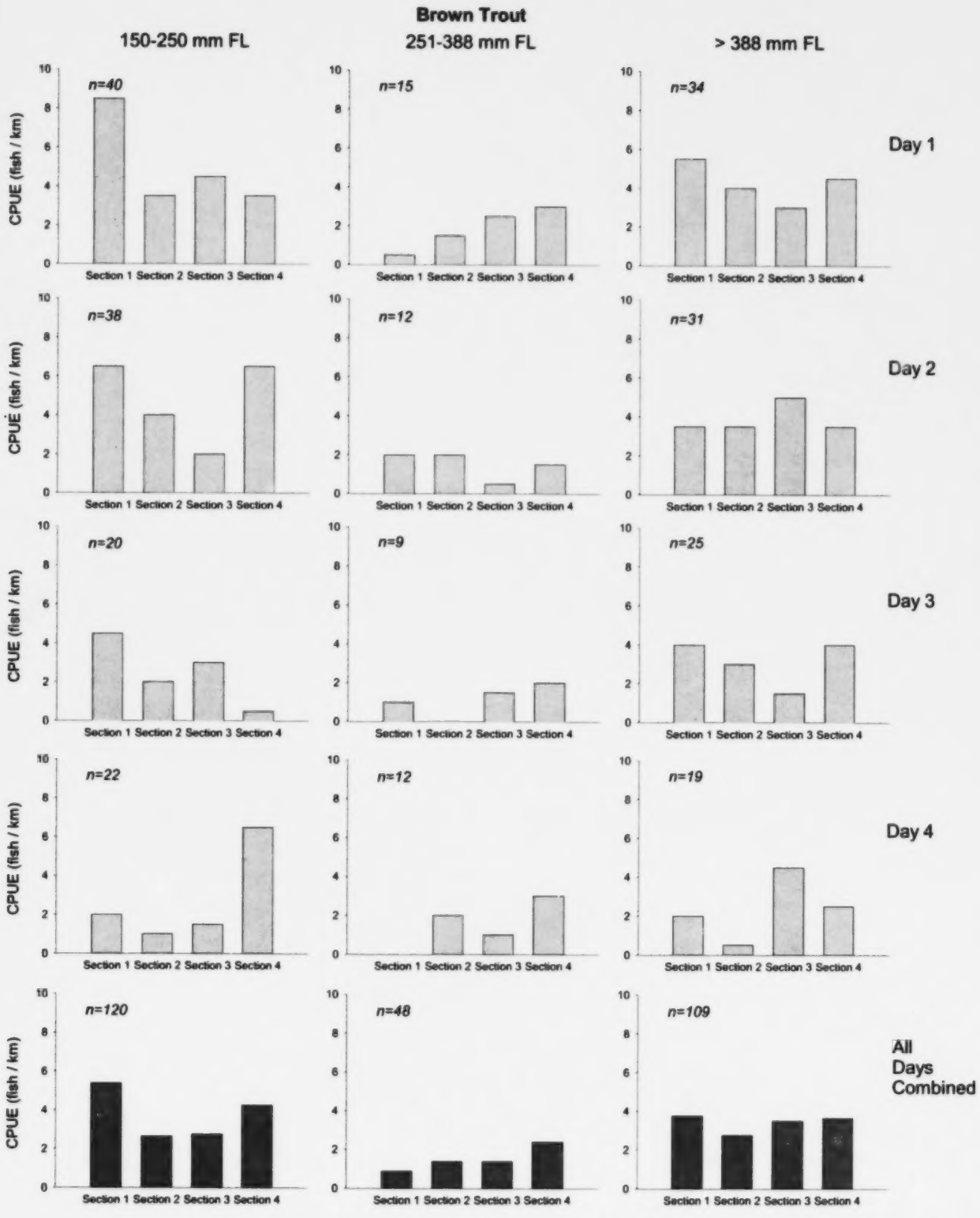

Figure B1 Relative abundance, expressed as catch-per-unit-effort (CPUE), of brown trout size-classes in the Bow River, August 2000.

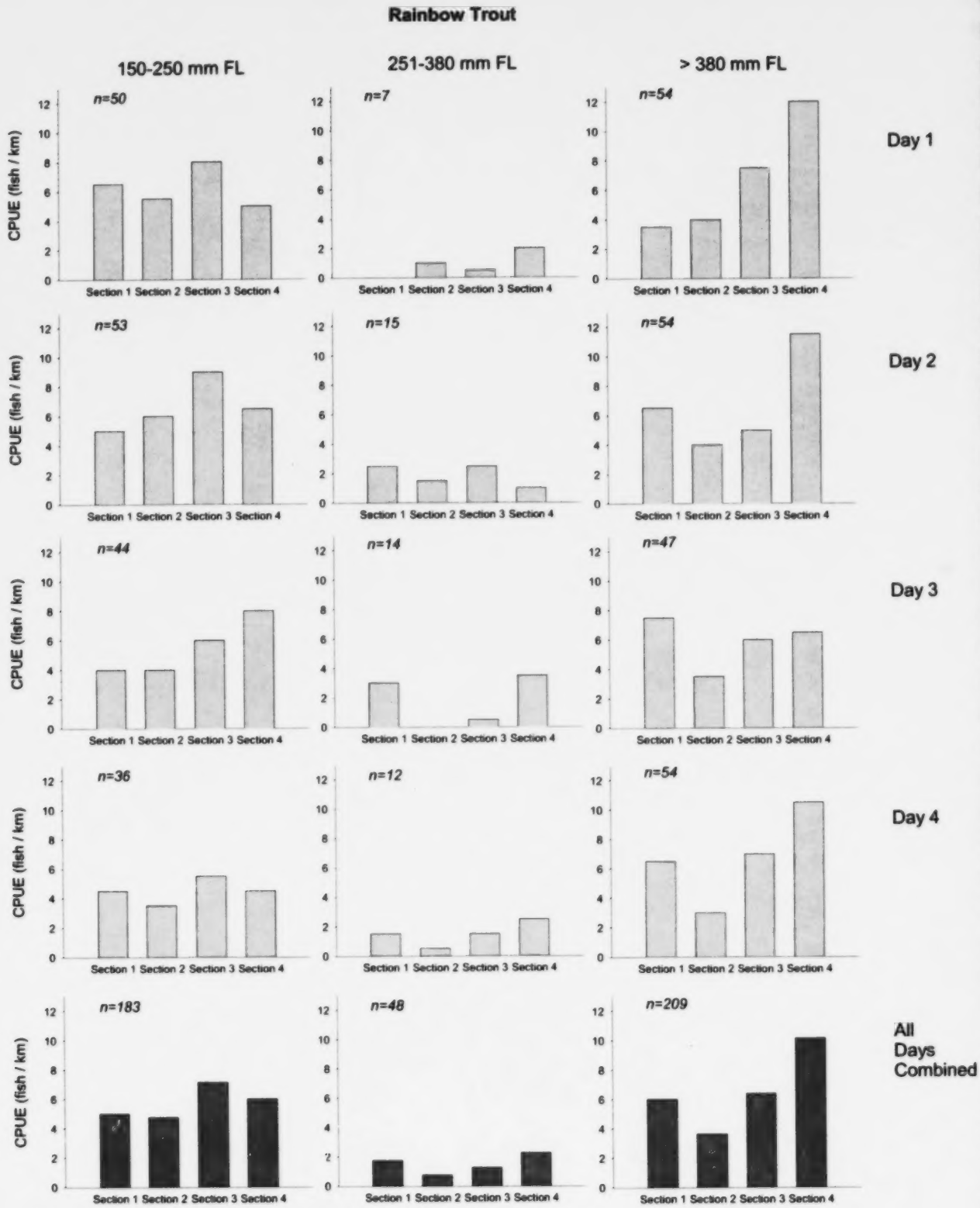

Figure B2 Relative abundance, expressed as catch-per-unit-effort (CPUE), of rainbow trout size-classes in the Bow River, August 2000.

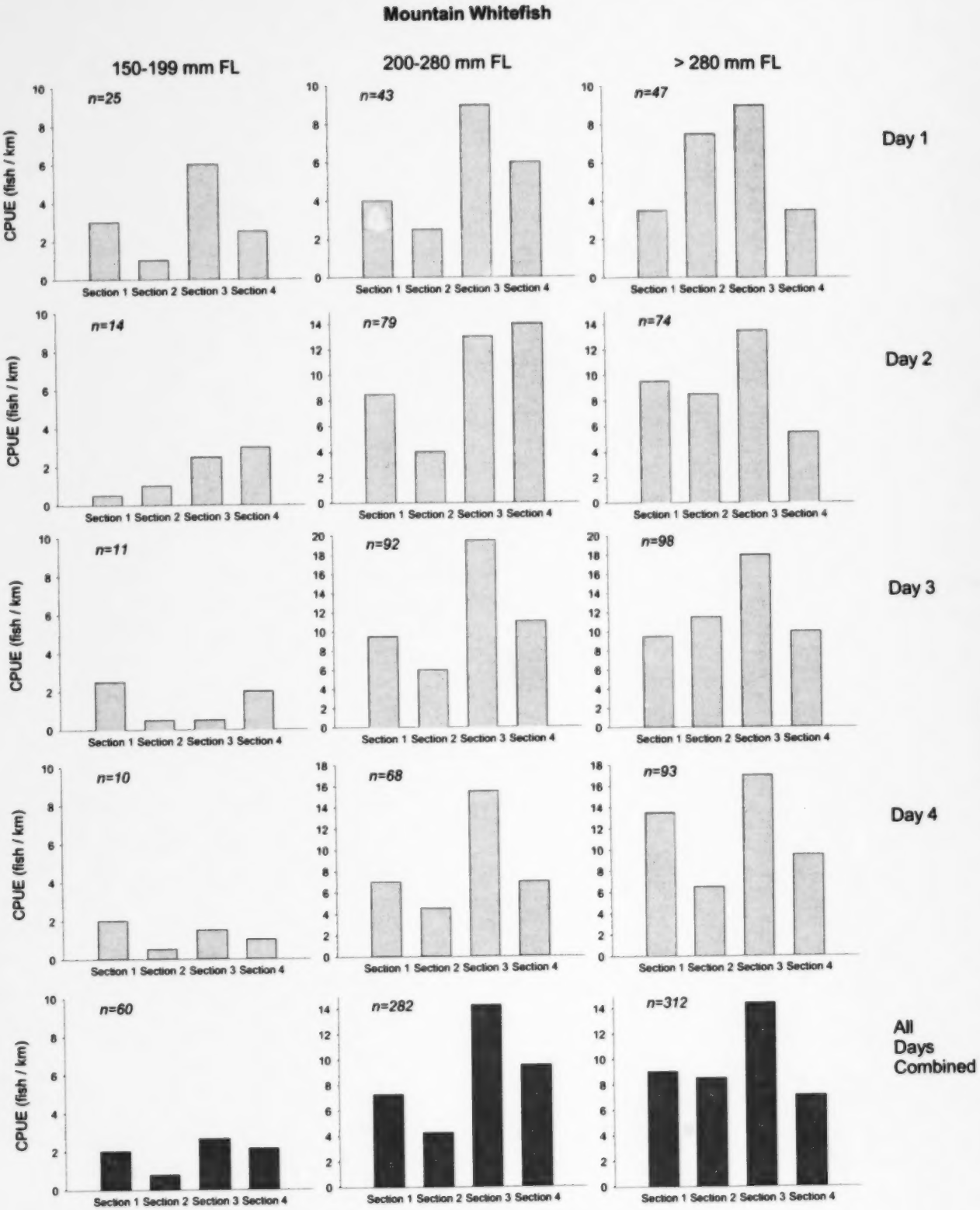

Figure B3 Relative abundance, expressed as catch-per-unit-effort (CPUE), of mountain whitefish size-classes in the Bow River, August 2000 (note changes in y-axis scales).

APPENDIX C

Population Estimate Data

Table C1. Encounter history data used to calculate population estimates of sportfish size-classes in the Bow River, August 2000.

Brown Trout Size-Classes (mm FL)								Rainbow Trout Size-Classes (mm FL)								Mountain Whitefish Size-Classes (mm FL)							
150-250		251-300		>300		>140		150-250		251-300		>300		>140		150-190		200-250		>250		>140	
Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n	Enc Hist[a]	n
00000001	11	00000001	7	00000001	8	00000001	26	00000001	19	00000001	9	00000001	31	00000001	59	00000001	4	00000001	40	00000001	47	00000001	91
00000010	11	00000010	2	00000010	7	00000010	20	00000010	14	00000010	2	00000010	18	00000010	34	00000010	6	00000010	21	00000010	31	00000010	58
00000100	4	00000011	1	00000100	9	00000011	1	00000100	18	00000100	8	00000100	18	00000100	44	00000100	4	00000011	1	00000100	45	00000011	1
00001000	14	00000100	4	00000101	2	00000100	17	00001000	19	00001000	5	00000101	1	00000101	1	00001000	4	00000100	47	00000101	2	00000100	96
00010000	24	00000110	1	00001000	11	00000101	2	00001001	1	00010000	5	00001000	17	00001000	41	00010000	5	00001000	42	00000110	1	00000101	2
00100000	12	00001000	4	00001100	1	00000110	1	00001010	1	00100000	7	00001100	1	00001001	1	00100000	8	00001100	1	00001000	32	00000110	1
01000000	29	00010000	7	00010000	15	00001000	29	00010000	34	00110000	1	00010000	22	00001010	1	01000000	12	00010000	43	00001001	3	00001000	78
01100000	2	00100000	5	00010001	1	00001100	1	00100000	19	01000000	5	00010010	1	00001100	1	10000000	10	00010100	1	00001010	2	00001001	3
10000000	7	01000000	9	00010100	1	00010000	46	01000000	27	01010000	1	00010100	1	00010000	61	10000100	1	00100000	25	00010000	27	00001010	2
10000100	2	10000000	6	00100000	14	00010001	1	01000100	2	10000000	1	00011000	1	00010010	1	11000000	1	00100100	1	00010001	1	00001100	1
				01000000	17	00010100	1	01001000	1			00100000	19	00010100	1			00110000	2	00010010	1	00010000	75
				01000001	1	00100000	31	10000000	16			00100100	3	00011000	1			00111000	1	00010100	2	00010001	1
				10000000	15	01000000	55	10000010	1			00101000	3	00100000	45			01000000	25	00010110	1	00010010	1
						01000001	1	10000100	1			00101010	1	00100100	3			01000001	1	00100000	33	00010100	3
						01100000	2					01000000	27	00101000	3			01010000	1	00100010	1	00010110	1
						10000000	28					01000001	1	00101010	1			01100000	3	00100100	1	00100000	66
						10000100	2					01010000	1	00110000	1			10000000	12	00101000	1	00100010	1
												01100000	1	01000000	59			10000001	1	00110000	1	00100100	2
												10000000	18	01000001	1					01000000	33	00101000	1
												10000001	1	01000100	2					01010000	1	00110000	3
												10001000	1	01001000	1					10000000	8	00111000	1
												10010000	1	01010000	2					10010000	1	01000000	70
												11000000	1	01100000	1					11000000	1	01000001	1
														10000000	35							01010000	2
														10000001	1							01100000	3
														10000010	1							10000000	30
														10000100	1							10000001	1
														10001000	1							10000100	1
														10010000	1							10010000	1
														11000000	1							11000000	2
116		46		102		284		173		44		189		406		55		268		276		509	

[a] Enc Hist = encounter history based on eight electrofishing runs; 0 indicates fish absence, whereas 1 indicates presence of the same fish.

e.g., 01001000 represents fish captured on the 2nd electrofishing run and recaptured on the 5th run

The numbers in italics beside each encounter history configuration represent the number of fish that exhibited a given encounter history.

Table C2. Comparison of population estimates of brown trout and rainbow trout size-classes (1982-2000) and mountain whitefish size classes (1999-2000) in the Bow River calculated using the Darroch method.

Species	Year	>388/380/280 mm FL			Total		
		fish/km	95% CI		fish/km	95% CI	
			lower	upper		lower	upper
Brown trout	1982	30	16	44	352	246	410
	1983	61	5	128	693	469	916
	1984	65	28	98	339	253	426
	1985	111	60	157	378	263	493
	1988	115	61	160	583	454	686
	1990	52	23	82	503	309	698
	1991	40	17	64	571	487	655
	1992	69	11	139	528	375	681
	1999	117	84	175	267	199	370
	2000	202	103	427	660	397	1131
Rainbow trout	1982	91	65	117	165	121	208
	1983	151	101	201	486	357	616
	1984	98	62	133	1010	827	1192
	1985	189	139	239	576	486	667
	1988	217	177	258	539	451	625
	1990	86	67	105	359	287	432
	1991	121	92	151	292	224	361
	1992	368	220	518	966	741	1192
	1999	176	108	307	224	139	382
	2000	223	155	337	681	491	964
Mountain whitefish	1999	132	82	229	853	584	1273
	2000	432	297	649	1143	851	1557

Table C3. Comparison of population estimates of brown trout, rainbow trout, and mountain whitefish size-classes in the Bow River calculated using the Null method, 1990-2000.

Species	Year	Small [a]			Intermediate			Large			Total [b]		
		fish/km	95% CI		fish/km	95% CI		fish/km	95% CI		fish/km	95% CI	
			lower	upper		lower	upper		lower	upper		lower	upper
Brown trout	1990	364	205	524	4	-[b]	-[b]	52	22	82	419	-[c]	-[c]
	1991	430	369	492	73	52	94	41	17	66	544	-[c]	-[c]
	1992	204	141	268	237	100	375	60	6	116	502	-[c]	-[c]
	1999	129	74	247	33	16	92	118	84	177	268	200	372
	2000	382	164	954	120	41	410	204	104	433	674	404	1162
Rainbow trout	1990	337	208	468	31	12	51	87	68	107	455	-[c]	-[c]
	1991	50	6	107	122	83	163	122	96	158	298	-[c]	-[c]
	1992	616	250	983	290	122	460	451	236	667	1357	-[c]	-[c]
	1999	11	4	52	3	-[b]	-[b]	178	9	311	226	140	386
	2000	492	255	996	110	38	376	224	155	339	684	493	968
Mountain whitefish	1999	-[d]	-[d]	-[d]	890	519	1571	136	84	237	865	591	1293
	2000	171	57	584	601	375	995	439	301	660[e]	1154[e]	859[e]	1573

[a] Brown trout: Small = 150-250 mm, Intermediate = 251-388 mm, Large = >388
Rainbow trout: Small = 150-250 mm, Intermediate = 251-380 mm, Large = >380
Mountain whitefish: Small = 150-199 mm, Intermediate = 200-280 mm, Large = >280

[b] No recaptures were encountered; therefore population estimate was set at the total number of captured fish.

[c] The 95% confidence intervals for the total brown trout and rainbow trout population estimates were not reported in Courtney (1993).

[d] Size class not evaluated in 1999.

[e] Includes small size class (150-199 mm FL) only in 2000.